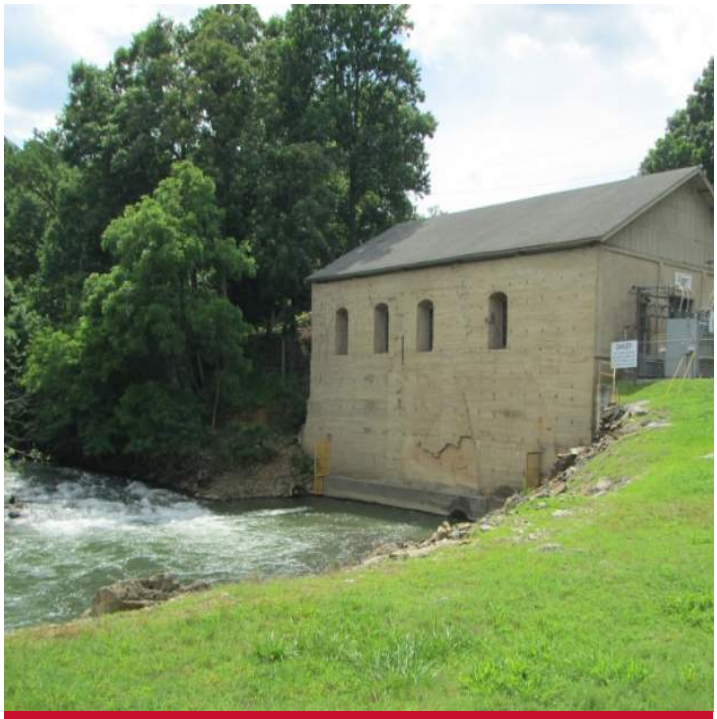

FINAL LICENSE APPLICATION

Volume II of IV

Part 2 - Consultation Appendix
Book 3 of 3

Niagara Hydroelectric Project
(FERC No. 2466)

February 28, 2022

Prepared by:

Prepared for:

APPALACHIAN POWER
An AEP Company
BOUNDLESS ENERGY

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Appendix H

Consultation Summary
Book 3 of 3

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Subject: FW: [EXTERNAL] FW: AEP Niagara Hydroelectric Project - Recreation Stakeholder Meeting Invitation

-----Original Message-----
From: Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Sent: Wednesday, April 7, 2021 9:13 AM
To: Michael.Clark@roanokeva.gov
Subject: RE: [EXTERNAL] FW: AEP Niagara Hydroelectric Project - Recreation Stakeholder Meeting Invitation

Hi Michael,

Thank you very much for your comments. You are correct we are continuing to study the potential of recreation releases into this second study year. I believe that Lindsay Webb is the go to contact for this project and she keeps Doug appraised of the progress, but I will certainly double check with her.

Have a great week,

Maggie Yayac
D 704.248.3666 M 610.299.0959
hdrinc.com/follow-us

-----Original Message-----
From: Michael.Clark@roanokeva.gov <Michael.Clark@roanokeva.gov>
Sent: Tuesday, April 6, 2021 9:20 AM
To: Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: Re: [EXTERNAL] FW: AEP Niagara Hydroelectric Project - Recreation Stakeholder Meeting Invitation

Thanks for the email, Maggie. With the dam itself outside the city limits, I do not plan on attending the meetings and don't have any comments from a professional standpoint. I would, however, encourage you to email Doug Blount, Director of General Services and Parks, Recreation, and Tourism for Roanoke County, to see if he would like some time to speak. His agency operates Explore Park so they certainly have a vested interest in this.

From my own personal standpoint, as well as anecdotally from members of my staff, if the dam can't be removed (which we know is not realistic), it would be ideal to have recreational releases in the summer. I understand that was included in the preliminary report and I think as an outdoor branded area, this would go a long way in catering to the recreational paddlers in and outside the region.

Thanks, again.

Best regards,

Michael.

* *

Michael Clark, CPRP | Director
Roanoke Parks and Recreation - A Nationally Accredited Agency
215 Church Avenue | Room 303 | Roanoke, VA 24011
P: 540.853.2236 | F: 540.853.1287 | E: Michael.Clark@RoanokeVA.gov PLAY Roanoke | Roanoke GO Fest

Building a welcoming community through PLAY Health and Well-Being | Inclusion | Service Excellence | Sustainability

From: "Yayac, Maggie" <Maggie.Yayac@hdrinc.com>
To: "michael.clark@roanokeva.gov" <michael.clark@roanokeva.gov>
Date: 04/05/2021 09:28 AM
Subject: [EXTERNAL] FW: AEP Niagara Hydroelectric Project - Recreation Stakeholder Meeting Invitation

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or on clicking links from unknown senders.
Good morning Michael,

I wanted to check-in to make sure this e-mail did not get lost and to confirm whether or not you planned to attend. I'd like to send out a placeholder meeting invite on Wednesday, so we can get it on everyone's calendar. Please let me know if you plan on attending and if so, what dates below work for you. Also, if you'd like to take the floor for 15 minutes to present some of your topics of interest.

Thanks!

Maggie Yayac
D 704.248.3666 M 610.299.0959
hdrinc.com/follow-us

From: Yayac, Maggie
Sent: Monday, March 29, 2021 5:07 PM
To: rcaywood@roanokecountyva.gov; Lindsay Webb <LWEBB@roanokecountyva.gov>; Liz Belcher <LBELCHER@roanokecountyva.gov>; pete@roanoke.org; Anita McMillan <amcmillan@vintonva.gov>; riverdancer1943@gmail.com; Amanda McGee <amcgee@rvarc.org>; michael.clark@roanokeva.gov; dawn_leonard@nps.gov; Wampler, Jennifer <jennifer.wampler@dcr.virginia.gov> <jennifer.wampler@dcr.virginia.gov>
Cc: Elizabeth B Parcell <ebparcell@aep.com>; Jonathan M Magalski <jmmagalski@aep.com>; Kulpa, Sarah <sarah.kulpa@hdrinc.com>; Frank Simms <fmsimms51@gmail.com>
Subject: AEP Niagara Hydroelectric Project - Recreation Stakeholder Meeting Invitation

Good evening,

As you are aware, as part of the relicensing effort for the Niagara Hydroelectric Project (FERC No. 2466), Appalachian Power Company (Appalachian), a unit of American Electric Power (AEP), is conducting a Recreation Study. As discussed at the ISR Meeting on January 21, 2021, Appalachian plans to host a virtual stakeholder meeting with primary recreation stakeholders this spring.

The purpose of this meeting is to gather information about current and future Roanoke River-oriented recreation initiatives and projects in the vicinity of the Niagara Project. We would like to give each stakeholder group 15 minutes to present to Appalachian and other stakeholders: (1) what your group is currently working on, and (2) your interests in specific recreational improvements in and around the Niagara Project.

If you are interested in participating, please respond to Maggie Yayac (maggie.yayac@hdrinc.com) with your availability to attend the below dates and times. If your group would like to present during the meeting please let us know (and note your topic(s) of interest) so we can plan a more detailed agenda. Once we have a general consensus on availability and interest in presenting, we will send out a meeting invitation with a link to join the web conference.

Potential dates for the Niagara Project Recreation Stakeholder Meeting:
- Tuesday, April 20th from 2-4pm
- Thursday, April 22nd from 9-11am
- Wednesday April 28th from 9-11am

Please let me know if you have any questions or if anyone has been inadvertently left off this invitation list.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Date: 4/7/21

Self-Certification Letter

Project Name: Niagara Hydroelectric Project (FERC No. 2466) - 2021 Field Sampling TOYR Waiver

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA conclusions. These conclusions resulted in:

- "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR § 17.40(o) [as determined through the Information, Planning, and Consultation System (IPaC) northern long-eared bat assisted determination key]; and/or
- "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the determinations described above for proposed and listed species and proposed and designated critical habitat. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat becomes available, this determination may be reconsidered. This certification letter is valid for 1 year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html. If you have any questions, please contact Troy Andersen of this office at (804) 824-2428.

Sincerely,

Cindy Schulz
Field Supervisor
Virginia Ecological Services

Enclosures - project review package

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: March 24, 2021
Consultation Code: 05E2VA00-2021-SLI-2810
Event Code: 05E2VA00-2021-E-08113
Project Name: Niagara Hydroelectric Project (FERC No. 2466) 2021 Field Sampling TOYR Waiver Request

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

From:	ernie.aschenbach@dwr.virginia.gov on behalf of ProjectReview (DGIF), rr
To:	rr dgif-Collection Permits; jastudio@edge-es.com; Huddleston, Misty; jpspaeth@edge-es.com; rr ProjectReview (DGIF)
Cc:	Amy Ewing; Scott Smith
Subject:	Fwd: Niagara Hydroelectric Project (FERC No. 2466) - 2021 Field Sampling TOYR Waiver Request
Date:	Wednesday, April 7, 2021 1:58:19 PM
Attachments:	image001.png online_project_review_certification_SIGNED.pdf USFWS Project Verification_Niagara_20210326.pdf 23405_DWR_email_NiagaraProjectRelicensingStudyScheduleUpdateMeetingNotes_20200717ss.pdf 23405_NiagaraProjectRelicensingStudyScheduleUpdateMeetingNotes_20200629usfws.pdf

ESSLog 23405; Niagara Study relicensing study schedule

The attached request was forwarded to me.

The request and proposed sampling schedule remain appropriate for the work being performed on behalf of American Electric Power (AEP), Edge Engineering and Science, LLC (EDGE) and HDR, Inc. (HDR) are providing field sampling services associated with relicensing activities for the Niagara Hydroelectric Project (Project) (FERC No. 2466). EDGE and HDR are requesting time-of-year restriction (TOYR) waivers for Tinker Creek and Roanoke River in Roanoke County, Virginia within the Project area.

Thanks.

Please note the Department of Wildlife Resources (DWR) new email addresses end in @dwr.virginia gov*

Ernie Aschenbach
Environmental Services Biologist
P 804.367.2733
Email: Ernie.Aschenbach@dwr.virginia gov
Virginia Department of Wildlife Resources
CONSERVE. CONNECT. PROTECT.
A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
www.dwr.virginia.gov

---------- Forwarded message ---------
From: **Smith, Scott** <scott.smith@dwr.virginia.gov>
Date: Fri, Apr 2, 2021 at 3:45 PM
Subject: Re: Niagara Hydroelectric Project (FERC No. 2466) - 2021 Field Sampling TOYR Waiver Request
To: Aschenbach, Ernst <ernie.aschenbach@dwr.virginia.gov>
Cc: Ewing, Amy (DGIF) <amy.ewing@dwr.virginia.gov>, ProjectReview (DGIF) <projectreview@dwr.virginia.gov>, rr dgif-Collection Permits <collectionpermits@dwr.virginia.gov>

Hey Ernie,

Yes, the request is still acceptable. They are doing this work at the request of natural resource agencies, so a waiver is appropriate.

SS

---------- Forwarded message ---------
From: **Aschenbach, Ernst** <ernie.aschenbach@dwr.virginia.gov>
Date: Tue, Mar 30, 2021 at 9:30 AM
Subject: Fwd: Niagara Hydroelectric Project (FERC No. 2466) - 2021 Field Sampling TOYR Waiver Request
To: Smith, Scott (DGIF) <scott.smith@dwr.virginia.gov>, Ewing, Amy (DGIF) <amy.ewing@dwr.virginia.gov>, ProjectReview (DGIF) <projectreview@dwr.virginia.gov>, Ernst Aschenbach <ernie.aschenbach@dwr.virginia.gov>, rr dgif-Collection Permits <collectionpermits@dwr.virginia.gov>

ESSLog 23405; Niagara Study relicensing study schedule

Scott

FYI.

According to our records, you represented DWR on the 7/17/2020 discussions of the study plan schedule with AEP, HDR/consultants, and USFWS.

Please see the recent request that Amy and DWR Collections (permits) staff received and advise if the request is acceptable.

Please note the Department of Wildlife Resources (DWR) new email addresses end in @dwr.virginia gov*

Ernie Aschenbach
Environmental Services Biologist
P 804.367.2733
Email: Ernie.Aschenbach@dwr.virginia gov
Virginia Department of Wildlife Resources
CONSERVE. CONNECT. PROTECT.
A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
www.dwr.virginia.gov

---------- Forwarded message ---------
From: **Ewing, Amy** <amy.ewing@dwr.virginia.gov>
Date: Tue, Mar 30, 2021 at 8:48 AM
Subject: Fwd: Niagara Hydroelectric Project (FERC No. 2466) - 2021 Field Sampling TOYR Waiver Request
To: Aschenbach Ernst ieq58323 <ernie.aschenbach@dwr.virginia.gov>

Hi Ernie,
I assume this is something you would handle. If I need to do anything, let me know.

Amy

Amy Martin Ewing
Environmental Services Biologist
Manager, Wildlife Information
she/her/hers
P 804.367.2211
Department of Wildlife Resources
CONSERVE. CONNECT. PROTECT.
A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228
www.VirginiaWildlife.gov

---------- Forwarded message ---------
From: **Jon Studio** <jastudio@edge-es.com>
Date: Mon, Mar 29, 2021 at 3:57 PM
Subject: Niagara Hydroelectric Project (FERC No. 2466) - 2021 Field Sampling TOYR Waiver Request
To: amy.ewing@dwr.virginia.gov <amy.ewing@dwr.virginia.gov>, collectionpermits@dwr.virginia.gov <collectionpermits@dwr.virginia.gov>

Cc: Huddleston, Misty <Misty.Huddleston@hdrinc.com>, John Spaeth <jpspaeth@edge-es.com>

To whom it may concern,

On behalf of American Electric Power (AEP), Edge Engineering and Science, LLC (EDGE) and HDR, Inc. (HDR) are providing field sampling services associated with relicensing activities for the Niagara Hydroelectric Project (Project) (FERC No. 2466). EDGE and HDR are requesting time-of-year restriction (TOYR) waivers for Tinker Creek and Roanoke River in Roanoke County, Virginia within the Project area. Although current study plans do not extend to the Smith Mountain Lake, a TOYR waiver is also requested for the Smith Mountain Lake fish assemblage in the event that there is overlap with fish species protected as part of the Smith Mountain Lake fish assemblage and the assemblage of the mainstem Roanoke River, or that the proposed field effort is extended further downstream than the currently proposed Project extent in response to agency requests.

Aquatic biological studies were requested and refined during the development of the Project's Proposed Study Plan, Revised Study Plan, and Study Plan Determination that included coordination with VDWR, USFWS, and USEPA. Three of the requested studies occur during the recommended TOYRs (Table 1). Documents outlining agency requests and specific Project methodologies are located at http://www.aephydro.com/HydroPlant/Niagara, but general methods and rationale are provided below as a quick review.

This information is provided in addition to the USFWS Self Certification Letter and Project Verification Package (attached), as required per the Virginia TOYR guidance document dated February 2021. This information was also submitted to the USFWS.

The applicable TOYRs in the Project area occur in Roanoke River and Tinker Creek for Roanoke Logperch (*Percina rex*; RLP), stocked trout, and Orangefin Madtom (*Noturus gilberti*). Instream field sampling efforts will target RLP at various life stages and supplemental macroinvertebrate collections. Although additional survey efforts are proposed, those survey activities anticipated during TOYR's are described below.

RLP larvae: Drift net sampling methods include three biologists deploying two, 20-minute net sets at five sample sites in shallow water adjacent to riffle-run habitat once per week for a total of ten weeks (Figure 1). The ten consecutive weekly samples will occur between April 1 and June 30 to align with RLP spawning.

RLP adults and subadults: A three-day sampling period will occur between June 1 and June 30 to determine RLP occupancy of the Project's bypass reach below Niagara Dam during spring flows. Backpack electrofishing methods include two backpack electrofishing units to sample 64 quadrats (eight meters by four meters) in riffle-run habitat (Figure 1).

Macroinvertebrate Sampling: Macroinvertebrates will be collected in the Project area to investigate the temporal changes in macroinvertebrate community. A sampling event is anticipated to occur between March 1 and May 31 to align with Virginia Department of Environmental Quality (VADEQ) stream macroinvertebrate Spring sample index period. Sampling will involve kick net methods along 100-meter segments of habitat at five quantitative sites (riffle-run) and five qualitative sites (multihabitat) over a three-day period (Figure 1).

Table 1: Roanoke River and Tinker Creek Time-of-Year Restriction Waiver Requested Activity

State-Recommended TOYR	Waiver Activity Request	Activity Date Range
[a] March 15 –	Kick Net -	March 1 – May

May 31	Macroinvertebrates	31
	Drift Net - Larval RLP	April 1 – June 30
[b] March 15 – June 30	Kick Net - Macroinvertebrates	March 1 – May 31
	Drift Net - Larval RLP	April 1 – June 30
	Backpack Electrofishing - RLP	June 1 – June 30
[c] October 1 – June 15	Kick Net - Macroinvertebrates	March 1 – May 31
	Drift Net - Larval RLP	April 1 – June 30
	Backpack Electrofishing - RLP	June 1 – June 30
[d]February 15 – June 15	Kick Net - Macroinvertebrates	March 1 – May 31
	Drift Net - Larval RLP	April 1 – June 30
	Backpack Electrofishing - RLP	June 1 – June 30

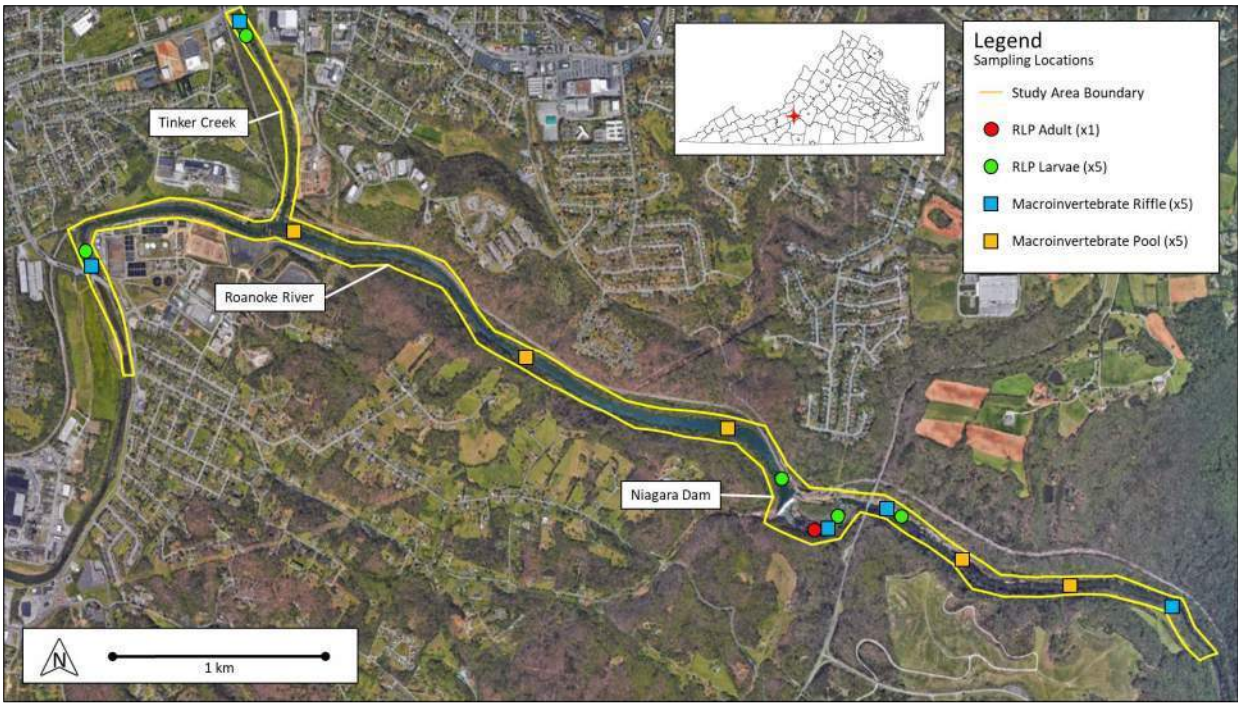
[a] No sampling in orangefin madtom waters from March 15th through May 31st

[b] No sampling in Roanoke logperch waters from March 15th through June 30th

[c] No sampling in stocked trout waters from October 1st through June 15th

[d] No fish assemblage sampling in Smith Mountain Lake from February 15 – June 15

Figure 1. Proposed Sampling Locations for Adult and Larval Roanoke Logperch and Macroinvertebrates at Niagara



We appreciate your consideration and request your concurrence on the information herein. Please contact Jon Studio (440-413-4609; jastudio@edge-es.com) or John Spaeth (513-377-0443; jpspaeth@edge-es.com) if you have any questions or require additional information regarding this request.

Thanks,

JON A. STUDIO

Avon, Ohio

M: 440.413.4609

edge-es.com

EDGE
ENGINEERING & SCIENCE
further insight.

Subject: FW: FW: Niagara Hydroelectric Project (FERC No. 2466) - ESSLog 23405- TOYR Waiver Request

Attachments: 23405_NiagaraProjectRelicensingStudyScheduleUpdateMeetingNotes_20200629usfws.pdf; Niagara Project Study Plan Coordination Call with Services_20190925.pdf; USFWS Project Verification_Niagara_20210326.pdf

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Monday, April 12, 2021 4:23 PM
To: Aschenbach, Ernst <ernie.aschenbach@dwr.virginia.gov>; rr dgif-Collection Permits <collectionpermits@dwr.virginia.gov>; jastudio@edge-es.com; jpspaeth@edge-es.com; Amy Ewing <amy.ewing@dwr.virginia.gov>; Scott Smith <scott.smith@dwr.virginia.gov>; Pinder, Mike (DGIF) <mike.pinder@dwr.virginia.gov>; Watson, Brian (DGIF) <brian.watson@dwr.virginia.gov>; McCloskey, John <john_mccloskey@fws.gov>; Harris, Johnathan (DGIF) <johnathan.harris@dwr.virginia.gov>; ProjectReview (DGIF) <projectreview@dwr.virginia.gov>; Sumalee Hoskin <sumalee_hoskin@fws.gov>; McCorkle, Richard <richard_mccorkle@fws.gov>; shirl.dressler@dwr.virginia.gov
Cc: Fernald, Ray (DGIF) <ray.fernald@dwr.virginia.gov>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>
Subject: RE: FW: Niagara Hydroelectric Project (FERC No. 2466) - ESSLog 23405- TOYR Waiver Request

Ernie,

Thanks for speaking with me last Friday regarding the request for a time-of-year-restriction (TOYR) waiver that HDR and Edge Engineering and Science (EDGE) submitted on behalf of Appalachian Power Company (Appalachian), a unit of American Electric Power for the Niagara Hydroelectric Project (Project; FERC # 2466), located on the Roanoke River in Roanoke County, Virginia. Based on our discussion, I am providing additional background information to support the waiver request.

Background:
Appalachian is pursuing a license renewal under the FERC Integrated Licensing Process. Detailed information on the proposed sampling methods for both the macroinvertebrate and adult RLP studies are provided in the Project Revised Study Plan and the FERC Study Plan Determination; available on the FERC e-library under Project No. 2466 or at the Appalachian Project website: http://www.aephydro.com/HydroPlant/Niagara.

Appalachian coordinated with Virginia Department of Wildlife Resources (VDWR) and U.S. Fish and Wildlife Service (USFWS) for the proposed studies during development of the Proposed Study Plan, scoping, and development of the Revised Study Plan. During a September 25, 2019 scoping call (see attachment dated 9/25/2019), Rick McCorkle (USFWS), Scott Smith (VDWR), and Paul Angermeier (Virginia Tech University) agreed that a spring survey for adult RLP in the bypass reach would help determine:

1. Presence of suitable habitat for adult RLP use during higher spring flows; and
2. Utilization of available habitat by adult RLP during higher spring flows.

Based on input during that call, the group agreed that the use of snorkeling methods to perform the adult RLP survey within the bypass reach would present safety risks, as the study goal is to determine if adult RLP are moving into and utilizing potential habitat created by Project spill into the bypass reach during spring months. The flows that we need to evaluate within the bypass reach in order to answer the study questions are likely not conducive to completing a safe and effective snorkel survey. As such, the need for a TOYR waiver was discussed during the September 25, 2019 coordination call, and the Revised Study Plan indicated that completion of spring sampling for the macroinvertebrate study and adult RLP study were contingent on receiving a waiver of the TOYR.

Purpose and Need:
The TOYR waiver is needed to support spring field sampling efforts for:

1. A benthic macroinvertebrate study; and
2. Field sampling of the bypass reach to determine if adult Roanoke Logperch (RLP) are moving into and potentially using the bypass reach during this higher flow period.

Methods:

1. The proposed benthic macroinvertebrate sampling effort would:
    a. Consist of qualitative and quantitative sample collection;
    b. Use sampling equipment and techniques that are consistent with Virginia Department of Environmental Quality (2008) sampling protocols; and
    c. Be performed according to the Revised Study Plan (including revisions based on the FERC Study Plan Determination and input from VDWR and USFWS).
2. The proposed adult RLP sampling effort would:
    a. Target the Niagara bypass reach during higher spring flows;
    b. Target available RLP habitat located in the lower portion of the bypass reach;
    c. Utilize backpack electrofishing methods;
    d. Include fish standard length and a photograph of collected RLP, followed by their immediate release as near as possible to the site of collection.

Let me know if there is interest/need for a group call to discuss this topic or if there is additional information that is needed to respond to our request for a TOYR waiver for either the macroinvertebrate study or the adult Roanoke Logperch sampling effort.

Thanks,
Misty

Misty Huddleston, PhD
Associate, SR. Environmental Scientist
D 704.248.3614 **M** 865.556.9153

hdrinc.com/follow-us

From: Aschenbach, Ernst <ernie.aschenbach@dwr.virginia.gov>
Sent: Friday, April 9, 2021 2:10 PM
To: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; rr dgif-Collection Permits <collectionpermits@dwr.virginia.gov>; jastudio@edge-es.com; jpspaeth@edge-es.com; Amy Ewing <amy.ewing@dwr.virginia.gov>; Scott Smith <scott.smith@dwr.virginia.gov>; Ernst Aschenbach <ernie.aschenbach@dwr.virginia.gov>; Pinder, Mike (DGIF) <mike.pinder@dwr.virginia.gov>; Watson, Brian (DGIF) <brian.watson@dwr.virginia.gov>; McCloskey, John <john_mccloskey@fws.gov>; Harris, Johnathan (DGIF) <johnathan.harris@dwr.virginia.gov>; ProjectReview (DGIF) <projectreview@dwr.virginia.gov>; Sumalee Hoskin <sumalee_hoskin@fws.gov>
Cc: Fernald, Ray (DGIF) <ray.fernald@dwr.virginia.gov>
Subject: Re: FW: Niagara Hydroelectric Project (FERC No. 2466) - 2021 Field Sampling TOYR Waiver Request

ESSLog 23405; Niagara Study relicensing study schedule

Misty et al.,

Hello!

I forwarded via separate email a recent email update was forwarded to me. Some of you may have already received this information.

Via (that separate) email clarifying that USFWS has not issued a waiver -- the USFWS recommendation regarding FESE Roanoke logperch TOYR and electroshocking is:

- **Electroshocking for adults** – should only occur after they have first started with snorkeling and RLP have not been caught or they can provide evidence that snorkeling is not working. No electroshocking within the RLP time-of-year restrictions (March 15-June30).
- Based on this recent update, DWR supports this recommendation.
- DWR-Collection Permits, Shirl Dressler-Setzer also notified you not to proceed.

If the DWR-collection permittees, DWR- and/or USFWS staff have additional questions, clarification, or comments pertaining to the proposed study schedule, please advise (by responding to all and forwarding as appropriate). This will help ensure pertinent information reaches those who need it. Any remaining concerns will need to be addressed as appropriate.

I do not recall being part of the previous discussions pertaining to the proposed study and schedule. Nevertheless, after receiving additional information, I will continue to try to help facilitate resolution, if necessary. I will try to call you.

Thanks.

Please note the Department of Wildlife Resources (DWR) new email addresses end in @dwr.virginia gov*

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Meeting Summary
Project: Niagara Hydroelectric Project (FERC No. 2466)
Subject: Fish Community and Roanoke Logperch Study Plan
Date: Wednesday, September 25, 2019 Location: WebEx (1:00pm-2:30pm)
Attendees: Jon Magalski (AEP), Liz Parcell (AEP), Scott Smith (VDGIF), Paul Angermeier (VA Tech), Rick McCorkle (USFWS), John McCloskey (USFWS), John Spaeth (ESI), Jon Studio (ESI), Brian McGurk (VDEQ), Sarah Kulpa (HDR), Misty Huddleston (HDR)

Misty reviewed the methodology for the fish community study (Task 1a of the Revised Study Plan)

- Rick, Scott, and Paul agreed that a spring survey for Roanoke Logperch would be beneficial.
- Action Item: Scott is going to check with VDGIF environmental group to see if they can waive the time-of-year-restrictions and approve a collector's permit to allow an electrofishing survey of the bypass reach (where Roanoke Logperch are not known to occur) during the spring months. Also, will need to coordinate and receive approval from USFWS.

Discussion of whether a single sampling event would be sufficient for Roanoke Logperch. Paul stated that he can't say so definitively, but it is possible and likely based on his experiences, particularly if survey done during late summer/low-flow period. Young-of-year (YOY) are more easily observed later in the year as they attain larger body size. Sample during that period increases odds of documenting multiple life stages (if present).

- Brian asked about sampling in the bypass reach during this same period. Discussion of whether Roanoke Logperch could occur in bypass reach during the spring when flows are higher and then move out of area as flows recede. Scott will talk internally about spring sampling in the bypass reach. Group agreed that it would be ideal to survey for Roanoke Logperch in the bypass reach in the spring and summer/late fall (2 times/year), pending VDGIF/USFWS approval to remove time-of-year restriction (if/as applicable). Snorkeling may not be possible during the higher/swifter flow conditions. The rest of the survey locations will just be surveyed in the late summer/fall timeframe.

→ Below are direct quotes (and table) from RSP, reviewed by agencies:

- Adult Roanoke Logperch sampling events will occur at each of the four locations between August-October 2020 during suitable stream flow conditions that align with previous studies done within the study area. Subject to approval by VDGIF and USFWS as noted below, one additional sampling event will occur in the bypass reach (i.e., RLP3A/RLP3B) between May-June 2020 because it is hypothesized that more-suitable habitat will be available to Roanoke Logperch during the spring (elevated river flows) rather than the fall (reduced river flows). The spring sampling event may allow for determination of differences in habitat availability and occupation during discrepant flow regimes. It is important to note that the spring sampling event will require a Roanoke Logperch time-of-year restriction waiver from VDGIF and USFWS and safe flow conditions to conduct the surveys within the bypass reach, if waived.

Table 6-1. Proposed Fish Community Study Schedule

Task	Proposed Timeframe for Completion
Study Planning and Existing Data Review	September 2019 – April 2020
Fish Community Study	August – October 2020
Roanoke Logperch Adult Surveys	May – June[1], August – October 2020
Roanoke Logperch Young-of-Year Surveys	August – October 2020
Roanoke Logperch Larval Surveys	April – June 2020
Desktop Impingement and Entrainment Evaluation	December 2019 – November 2020
Distribute Draft Study Report with the ISR	December 2020

[1]Spring sampling will only be performed in the bypass reach, assuming a waiver is granted from the USFWS and VDGIF for sampling within the time-of-year restriction period.

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

April 30, 2021

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Niagara Hydroelectric Project (FERC No. 2466-034)
Third Quarterly Study Progress Report – Spring 2021

Dear Secretary Bose:

Appalachian Power Company (Appalachian or Applicant), a unit of American Electric Power (AEP) is the Licensee, owner, and operator of the run-of-river 2.4 megawatt (MW) Niagara Hydroelectric Project (Project No. 2466) (Project or Niagara Project) located on the Roanoke River in Roanoke County, Virginia. The Project is currently undergoing relicensing following the Federal Energy Regulatory Commission's (FERC or Commission) Integrated Licensing Process (ILP).

Pursuant to 18 Code of Federal Regulations (CFR) § 5.15(c), Appalachian filed the Initial Study Report (ISR) with the Commission on January 11, 2021, which summarized study activities performed in 2020, as well as ILP activities expected to be completed in 2021.

This Third Quarterly Study Progress Report describes the activities performed since the ISR was filed, including activities that occurred in quarter 1 (Q1) of 2021 and activities expected to be conducted in quarter 2 (Q2) of 2021. Unless otherwise described, all relicensing studies are being conducted in conformance with the approved Revised Study Plan (RSP) and the Commission's Study Plan Determination (SPD).

General Updates – ILP Process and Milestones

- As required by the ILP schedule, within 15 days of the ISR filing, Appalachian held a virtual ISR meeting via WebEx on Thursday, January 21, 2021 which included participation by agencies and stakeholders with interest in the Project.
- The ISR meeting summary was filed with FERC on February 5, 2021. Stakeholders' comments on the ISR meeting summary were due by March 7, 2021. Appalachian filed responses to stakeholder comments with FERC on April 6, 2021.

Bypass Reach Flow and Aquatic Habitat Study

- The GIS-based desktop aquatic habitat assessment and Habitat Suitability Index curves for the aquatic species that will be modeled in the bypass reach, as well as the proposed test flow scenarios that will be used to support model calibration and validation activities, were summarized in the Preliminary Bypass Reach Flow and Aquatic Habitat Study Report provided in the ISR.
- Field data collection is planned for the 2021 field season (likely late Q2 or early quarter 3 [Q3]) to avoid higher inflows that typically occur over the early spring months. Once the field data has been collected, a two-dimensional (2D) aquatic habitat model will be developed. Modeling results, conclusions, and recommendations will be provided in the Updated Study Report (USR) in the fourth quarter (Q4) of 2021.

Water Quality Study

- Field data collected during the 2020 field season were summarized in the Preliminary Water Quality Study Report provided in the ISR.
- As described in the ISR and subsequent comments filed by Appalachian, Appalachian plans to reinstall two continuous temperature and dissolved oxygen (DO) data sondes in the bypass reach (one at the upstream monitoring location and the other at the downstream monitoring location) from July – September 2021 (with the possibility of extending through October 2021 depending on water temperatures and bypass reach flow conditions). Appalachian also proposes to reinstall a continuous temperature and DO data sonde in the tailrace (during the same period) to capture additional data during powerhouse operations.
- As described in Appalachian's response to comments filing, Appalachian plans to collect discrete water quality profile data at the forebay monitoring location during equipment checks and data downloads for the continuous monitoring instrumentation.
- Additional water quality data collected during the 2021 field season will be summarized, along with any conclusions or recommendations, in the USR in Q4 2021.

Fish Community Study

- A single season of field data collection for the general fish community study was completed between September and October 2020. Results from the effort were reported in the ISR.
- As communicated in previous study progress reports and requested by U.S. Fish and Wildlife Service (USFWS) in March 2020, Appalachian rescheduled the adult and young-of-year Roanoke Logperch sampling efforts, which were originally planned for 2020, to 2021.

- A Larval Drift Study was planned for early spring 2021 to coincide with the Roanoke Logperch (*Percina Rex*) spawning window. Data collection efforts were scheduled to start at the beginning of April 2021 and continue for 10 consecutive weeks, ending in mid-June. The study requires (prior to field data collection) a Section 10(a)(1)(A) permit from the USFWS regional office. An application for the federal recovery permit was submitted in December 2020 by Edge Engineering & Science, LLC (EDGE) on behalf of Appalachian (Application ID: CS0003751, Permit ID:PER0002735). The timing of this application filing was discussed during the ISR, including with representatives of USFWS. The 30-day public comment period for the permit application was initiated by USFWS via public notice published in the Federal Register on April 28, 2021. Based on the date of publication, the 30-day public comment period, and anticipated time required for Appalachian's subconsultant to receive permit (if approved), Appalachian is unable to complete the Larval Drift Study, as proposed in the RSP. It is not possible to delay the start of the study to mid-June, as Roanoke Logperch will have completed their spawning season in the Roanoke River by then. Appalachian plans to consult with agencies and stakeholders in Q2 regarding potential alternatives or next steps for this study task.
- Field sampling for adult and young-of-year Roanoke Logperch will be completed between August and October 2021. A separate adult Roanoke Logperch sampling event is planned between May and June 2021 to determine if the adult life stage moves into the Niagara bypass channel during higher spring flow conditions. This sampling effort is pending the receipt of a waiver of time-of-year-restrictions (TOYR) in place for protection of Roanoke Logperch. A request for waiver of the TOYR was submitted to the Virginia Department of Wildlife Resources (VDWR) and USFWS by EDGE and HDR on behalf of Appalachian on March 29, 2021, and Appalachian has been in frequent communication with these agencies regarding the status of this request. Appalachian understands that the USFWS and VDWR held an informal virtual coordination meeting on April 23, 2021 to allow agency personnel to discuss the driver, needs, risks, and concerns with approving the TOYR waiver to facilitate spring 2021 field sampling studies. Conclusions of the meeting have not been shared with Appalachian, and coordination efforts concerning the waiver are ongoing at this time. Without the TOYR waiver approval, Appalachian will be unable to determine if adult Roanoke Logperch utilize the Niagara bypass channel, as requested by the USFWS during the study planning stage of this ILP.

- Appalachian will initiate the Turbine Blade Strike Evaluation for Niagara using the most recent version of the USFWS Turbine Blade Strike Analysis Model[1] and will also incorporate available historical information. A tentative list of species collected at the site to be used in the analysis was presented in the ISR. The analysis and reporting will be performed in Q2 2021 and results will be included in the USR.

Benthic Aquatic Resources Study

- Field data collection for the macroinvertebrate and crayfish community was completed between September and October 2020. Taxonomic identification of samples was completed in Q1 2021. Detailed results of the study and data analyses will be provided in the USR. A brief summary of the data is provided here:
    - Crayfish
        i. A few Crayfish specimens representing a single family (Cambaridae) from the genus *Fraxonius* were collected at the farthest upstream and most downstream sampling locations.
    - Macroinvertebrates:
        i. The total number of taxa collected at study sites was between 8 and 22; the lowest number of taxa (between 8 and 12 species) occurred in samples collected in the bypass channel.
        ii. The diversity of the EPTs (Ephemeroptera, Plecoptera, Trichoptera) was consistently on the low end and varied between two and nine species. The largest diversity occurred at the farthest upstream riffle (Site NFQT2) in the study area. The density of EPT organisms varied between 5 and 65 organisms; the lowest densities were documented in the bypass reach and tailrace sample locations. No Plecoptera specimens were collected.
        iii. Specimens from five families of Gastropods and two families of clams (Asian and Fingernail clams) were collected across the study area; these specimens had low relative abundance.
- A second benthic macroinvertebrate and crayfish field sampling effort is currently planned for spring 2021. Appalachian's consultant presently plans to complete the macroinvertebrate and crayfish sampling effort prior to the end of the spring

[1] U.S. Fish and Wildlife Service (USFWS). 2020. TBSA Model: A Desktop Tool for Estimating Mortality of Fish Entrained in Hydroelectric Turbines. Excel file dated December 9, 2020.

macroinvertebrate index period (May 31) as defined by VDEQ 2008. Appalachian has been informed by agencies that the TOYR waiver from USFWS and VDWR for the protection of Roanoke Logperch extends to this sampling effort as well. As described above for the Fish Community Study, Appalachian is actively pursuing this waiver request and coordination is ongoing with the USFWS and VDWR. In the absence of the TOYR waiver authorization, Appalachian will have to delay field sampling effort for the benthic macroinvertebrate and crayfish study until after the end of the TOYR window (June 30). Field sampling would then be initiated as soon as possible in July 2021, as conditions allow. Results of the laboratory processing, taxonomic identification, and data processing will be provided in the USR.

Recreation Study

- The Recreation Visitor Use Online Survey is on-going and will continue to be available in support of the Recreation Use Documentation survey.
- One of the facilities included in the Recreation Use Documentation task is the Roanoke River Overlook and Trail. Construction at the Blue Ridge Parkway is expected to begin in Q2 2021, which will force the trail to close; therefore, HDR's sub-consultant, Young Energy Services (YES) completed four in-person surveys at this facility ahead of schedule, including weekdays and weekends. The remainder of the facilities included in Recreation Use Documentation task will be surveyed by YES beginning in Q2 2021 according to the schedule presented in the RSP.
    - In the RSP, it was assumed that YES would obtain visitor use data from the Roanoke River Overlook and Trail and would also assess usage of the Project canoe portage since the put-in is located directly across the river and is visible from the end of the Roanoke River Trail. Closure of the Blue Ridge Parkway will, however, inhibit access to the Roanoke River Trail throughout the majority of the 2021 study season. As an alternative to in-person periodic observation of the portage from across the river, Appalachian plans to install a trail camera in the vicinity of the portage put-in location to record activity during the Recreation Use Documentation timeframe (May through October 2021).
- Appalachian hosted a virtual (WebEx) meeting on April 20, 2021 for interested recreation stakeholders. In addition to Appalachian and Appalachian's consultants (HDR and YES), the following entities participated in this meeting: Roanoke River Blueway Committee, Town of Vinton, Friends of the Rivers of Virginia (FORVA), Roanoke Valley Greenways, Virginia Department of Conservation and Recreation, Roanoke Regional Partnership, and Roanoke County. The meeting included presentations by Roanoke County, Roanoke River

Blueway Committee, and FORVA and provided updates on recreational initiatives, priorities, and recommendations from these organizations.

Cultural Resources Study

- Data collection for the Cultural Resources Study was completed in 2020 and summarized in the ISR. Appalachian completed the remaining fieldwork, the geomorphology survey, during the week of April 19, 2021. Complete results of this study will be filed with the USR.

If there are any questions regarding this progress report, please do not hesitate to contact me at (614) 716-2240 or via email at jmmagalski@aep.com

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation

Subject: FW: Niagara Hydroelectric Project (VA) -- Filing of ILP Study Progress Report
Attachments: Niagara Third Quarterly Progress Report April 2021.pdf

From: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>
Sent: Monday, May 3, 2021 5:24 PM
To: ACHP - John Eddins <jeddins@achp.gov>; Catawba Indian Nation - Wenonah Haire <caitlin.rogers@catawba.com>; County of Roanoke - David Henderson <dhenderson@roanokecountyva.gov>; County of Roanoke - Lindsay Webb <LWEBB@roanokecountyva.gov>; County of Roanoke - Michael Clark <Michael.Clark@roanokeva.gov>; County of Roanoke - Richard Caywood <rcaywood@roanokecountyva.gov>; Delaware Nation - Eric Paden <epaden@delawarenation-nsn.gov>; Friends of the Blue Ridge Parkway - Audrey Pearson <audrey_pearson@friendsbrp.org>; Friends of the Rivers of Virginia - Bill Tanger <riverdancer1943@gmail.com>; Harold Peterson <harold.peterson@bia.gov>; Kevin Colburn - American Whitewater (kevin@americanwhitewater.org) <kevin@americanwhitewater.org>; Monacan Indian Nation - Kenneth Branham <TribalOffice@MonacanNation.com>; NPS - Dawn Leonard <dawn_leonard@nps.gov>; Roanoke County Parks - Doug Blount <dblount@roanokecountyva.gov>; Roanoke Regional Partnership - Pete Eshelman <pete@roanoke.org>; Roanoke River Blueway <roanokeriverblueway@gmail.com>; Roanoke Valley Alleghany Regional Commission - Amanda McGee <amcgee@rvarc.org>; Roanoke Valley Greenway - Liz Blecher <liz.belcher@greenways.org>; Smith Mountain Lake Assn - Lorie Smith <TheOffice@SMLAssociation.org>; Town of Vinton - Anita McMillan <amcmillan@vintonVA.gov>; Town of Vinton - Bo Herndon <wherndon@vintonVA.gov>; Town of Vinton - Kenny Sledd <ksledd@vintonVA.gov>; Town of Vinton - Nathan McClung <nmcclung@vintonVA.gov>; Tri-County Lakes Administrative Commission - Paula Shoffner <paulas@sml.us.com>; USEPA - Matthew Lee <lee.matthew@epa.gov>; USFWS <richard_mccorkle@fws.gov>; USFWS - John McCloskey <John_mcCloskey@fws.gov>; USGS - Mark Bennett <mrbennet@USGS.gov>; VA Cooperative Fish and Wildlife Research Unit - Paul Angermeier <biota@vt.edu>; VADCR - Jennifer Wampler <jennifer.wampler@dcr.virginia.gov>; VADCR - Natural Heritage <nhreview@dcr.virginia.gov>; VADCR - Robbie Ruhr <Robbie.Rhur@dcr.virginia.gov>; VADEQ - Andrew Hammond <andrew.hammond@deq.virginia.gov>; VADEQ - Anthony Cario <anthony.cario@deq.virginia.gov>; VADEQ - Brian McGurk <Brian.McGurk@deq.virginia.gov>; VADEQ - Matthew Link <matthew.link@deq.virginia.gov>; VADEQ - Scott Kudlas <scott.kudlas@deq.virginia.gov>; Virginia Council on Indians - Emma Williams <emma.williams@governor.virginia.gov>; Virginia Department of Conservation and Recreation - Rene Hypes <rene.hypes@dcr.virginia.gov>; Virginia Department of Game and Inland Fisheries - Scott Smith <scott.smith@dgif.virginia.gov>
Cc: Jonathan M Magalski <jmmagalski@aep.com>; 'ebparcell@aep.com' <ebparcell@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: Niagara Hydroelectric Project (VA) -- Filing of ILP Study Progress Report

Niagara Hydroelectric Project Stakeholders:

Appalachian Power Company (Appalachian), a unit of American Electric Power (AEP), is the licensee, owner and operator of the Niagara Hydroelectric Project (FERC No. 2466) (Project) located on the Roanoke River in Roanoke County, Virginia. The Project is operated under a license issued by the Federal Energy Regulatory Commission (FERC). The existing FERC license for the Project expires on February 29, 2024. Appalachian is pursuing a new license for the continued operation of the Project in accordance with FERC's Integrated Licensing Process (ILP).

Pursuant to the ILP, Appalachian filed the third ILP Study Progress Report with the Commission on Friday, April 30. We are notifying stakeholders and distributing an electronic copy of this submittal (attached). The filing can also be viewed online at FERC's eLibrary and will be added to the Project's public relicensing website (http://www.aephydro.com/HydroPlant/Niagara) in the coming days.

Thank you for your continued interest in this Project. Should you have any questions regarding this filing, please contact Jon Magalski with AEP at (614) 716-2240 or jmmagalski@aep.com.

Thank you,

Sarah Kulpa
Project Manager

HDR
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Charlotte, NC 28202-2075
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Subject: FW: [EXTERNAL] RE: FW: Niagara Hydroelectric Project (FERC No. 2466) - ESSLog 23405- TOYR Waiver Request

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Monday, May 3, 2021 4:12 PM
To: McCloskey, John <john_mccloskey@fws.gov>
Cc: Fernald, Ray (DGIF) <ray.fernald@dwr.virginia.gov>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>
Subject: RE: [EXTERNAL] RE: FW: Niagara Hydroelectric Project (FERC No. 2466) - ESSLog 23405- TOYR Waiver Request

John,

Thank you for the update on the waiver request. I will get started on coordinating a call with the individuals copied on this email correspondence, Dr. Paul Angermeier, and Jon Studio (Edge Engineering and Science).

I will be sending along an email sometime tomorrow with suggested time slots for this week as potential options for a group call.

Thanks,
Misty

Misty Huddleston, PhD
Associate, SR. Environmental Scientist
D 704.248.3614 **M** 865.556.9153

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From: McCloskey, John <john_mccloskey@fws.gov>
Sent: Monday, May 3, 2021 3:37 PM
To: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Cc: Fernald, Ray (DGIF) <ray.fernald@dwr.virginia.gov>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>
Subject: Re: [EXTERNAL] RE: FW: Niagara Hydroelectric Project (FERC No. 2466) - ESSLog 23405- TOYR Waiver Request

Hi Misty,

The resource agencies are requesting a call to discuss the request for a TOYR waiver to conduct benthic macroinvertebrate samples and perform spring adult RLP surveys in the bypass reach using electrofishing. The RLP experts with the resource agencies had a call on April 23, and we have reached an agreement on a path forward. We would appreciate if you could set up a call for everyone to talk so we can reach resolution on this issue. The resource agencies ask that Dr. Paul Angermeier (copied) also be included on the invite because of his expertise in RLP surveys.

Thanks, John.

****

John McCloskey

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

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****

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Monday, April 12, 2021 4:23 PM
To: Aschenbach, Ernst <ernie.aschenbach@dwr.virginia.gov>; rr dgif-Collection Permits <collectionpermits@dwr.virginia.gov>; jastudio@edge-es.com <jastudio@edge-es.com>; jpspaeth@edge-es.com <jpspaeth@edge-es.com>; Amy Ewing <amy.ewing@dwr.virginia.gov>; Scott Smith <scott.smith@dwr.virginia.gov>; Pinder, Mike (DGIF) <mike.pinder@dwr.virginia.gov>; Watson, Brian (DGIF) <brian.watson@dgif.virginia.gov>; McCloskey, John <john_mccloskey@fws.gov>; Harris, Johnathan (DGIF) <johnathan.harris@dwr.virginia.gov>; ProjectReview (DGIF) <projectreview@dwr.virginia.gov>; Hoskin, Sumalee <sumalee_hoskin@fws.gov>; McCorkle, Richard <richard_mccorkle@fws.gov>; shirl.dressler@dwr.virginia.gov <shirl.dressler@dwr.virginia.gov>
Cc: Fernald, Ray (DGIF) <ray.fernald@dwr.virginia.gov>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] RE: FW: Niagara Hydroelectric Project (FERC No. 2466) - ESSLog 23405- TOYR Waiver Request

Ernie,

Thanks for speaking with me last Friday regarding the request for a time-of-year-restriction (TOYR) waiver that HDR and Edge Engineering and Science (EDGE) submitted on behalf of Appalachian Power Company (Appalachian), a unit of American Electric Power for the Niagara Hydroelectric Project (Project; FERC # 2466), located on the Roanoke River in

Roanoke County, Virginia. Based on our discussion, I am providing additional background information to support the waiver request.

Background:

Appalachian is pursuing a license renewal under the FERC Integrated Licensing Process. Detailed information on the proposed sampling methods for both the macroinvertebrate and adult RLP studies are provided in the Project Revised Study Plan and the FERC Study Plan Determination; available on the FERC e-library under Project No. 2466 or at the Appalachian Project website: http://www.aephydro.com/HydroPlant/Niagara.

Appalachian coordinated with Virginia Department of Wildlife Resources (VDWR) and U.S. Fish and Wildlife Service (USFWS) for the proposed studies during development of the Proposed Study Plan, scoping, and development of the Revised Study Plan. During a September 25, 2019 scoping call (see attachment dated 9/25/2019), Rick McCorkle (USFWS), Scott Smith (VDWR), and Paul Angermeier (Virginia Tech University) agreed that a spring survey for adult RLP in the bypass reach would help determine:

1. Presence of suitable habitat for adult RLP use during higher spring flows; and
2. Utilization of available habitat by adult RLP during higher spring flows.

Based on input during that call, the group agreed that the use of snorkeling methods to perform the adult RLP survey within the bypass reach would present safety risks, as the study goal is to determine if adult RLP are moving into and utilizing potential habitat created by Project spill into the bypass reach during spring months. The flows that we need to evaluate within the bypass reach in order to answer the study questions are likely not conducive to completing a safe and effective snorkel survey. As such, the need for a TOYR waiver was discussed during the September 25, 2019 coordination call, and the Revised Study Plan indicated that completion of spring sampling for the macroinvertebrate study and adult RLP study were contingent on receiving a waiver of the TOYR.

Purpose and Need:

The TOYR waiver is needed to support spring field sampling efforts for:

1. A benthic macroinvertebrate study; and
2. Field sampling of the bypass reach to determine if adult Roanoke Logperch (RLP) are moving into and potentially using the bypass reach during this higher flow period.

Methods:

1. The proposed benthic macroinvertebrate sampling effort would:
    a. Consist of qualitative and quantitative sample collection;
    b. Use sampling equipment and techniques that are consistent with Virginia Department of Environmental Quality (2008) sampling protocols; and
    c. Be performed according to the Revised Study Plan (including revisions based on the FERC Study Plan Determination and input from VDWR and USFWS).
2. The proposed adult RLP sampling effort would:
    a. Target the Niagara bypass reach during higher spring flows;

b. Target available RLP habitat located in the lower portion of the bypass reach;
c. Utilize backpack electrofishing methods;
d. Include fish standard length and a photograph of collected RLP, followed by their immediate release as near as possible to the site of collection.

Let me know if there is interest/need for a group call to discuss this topic or if there is additional information that is needed to respond to our request for a TOYR waiver for either the macroinvertebrate study or the adult Roanoke Logperch sampling effort.

Thanks,

Misty

Misty Huddleston, PhD

Associate, SR. Environmental Scientist
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From: Aschenbach, Ernst <ernie.aschenbach@dwr.virginia.gov>
Sent: Friday, April 9, 2021 2:10 PM
To: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; rr dgif-Collection Permits <collectionpermits@dwr.virginia.gov>; jastudio@edge-es.com; jpspaeth@edge-es.com; Amy Ewing <amy.ewing@dwr.virginia.gov>; Scott Smith <scott.smith@dwr.virginia.gov>; Ernst Aschenbach <ernie.aschenbach@dwr.virginia.gov>; Pinder, Mike (DGIF) <mike.pinder@dwr.virginia.gov>; Watson, Brian (DGIF) <brian.watson@dwr.virginia.gov>; McCloskey, John <john_mccloskey@fws.gov>; Harris, Johnathan (DGIF) <johnathan.harris@dwr.virginia.gov>; ProjectReview (DGIF) <projectreview@dwr.virginia.gov>; Sumalee Hoskin <sumalee_hoskin@fws.gov>
Cc: Fernald, Ray (DGIF) <ray.fernald@dwr.virginia.gov>
Subject: Re: FW: Niagara Hydroelectric Project (FERC No. 2466) - 2021 Field Sampling TOYR Waiver Request

ESSLog 23405; Niagara Study relicensing study schedule

Misty et al.,

Hello!

I forwarded via separate email a recent email update was forwarded to me. Some of you may have already received this information.

Via (that separate) email clarifying that USFWS has not issued a waiver -- the USFWS recommendation regarding FESE Roanoke logperch TOYR and electroshocking is:

- **Electroshocking for adults** – should only occur after they have first started with snorkeling and RLP have not been caught or they can provide evidence that snorkeling is not working. No electroshocking within the RLP time-of-year restrictions (March 15-June30).
- Based on this recent update, DWR supports this recommendation.
- DWR-Collection Permits, Shirl Dressler-Setzer also notified you not to proceed.

If the DWR-collection permittees, DWR- and/or USFWS staff have additional questions, clarification, or comments pertaining to the proposed study schedule, please advise (by responding to all and forwarding as appropriate). This will help ensure pertinent information reaches those who need it. Any remaining concerns will need to be addressed as appropriate.

I do not recall being part of the previous discussions pertaining to the proposed study and schedule. Nevertheless, after receiving additional information, I will continue to try to help facilitate resolution, if necessary. I will try to call you.

Thanks.

Please note the Department of Wildlife Resources (DWR) new email addresses end in @dwr.virginia gov*

Ernie Aschenbach
Environmental Services Biologist
P 804.367.2733
Email: Ernie.Aschenbach@dwr.virginia gov
Virginia Department of Wildlife Resources
CONSERVE. CONNECT. PROTECT.
A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
www.dwr.virginia.gov

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
May 10, 2021

OFFICE OF ENERGY PROJECTS

Project No. 2466-034 – Virginia
Niagara Hydroelectric Project
Appalachian Power Company

VIA Electronic Mail

Mr. Jonathan Magalski
Environmental Specialist Consultant
American Electric Power
jmmagalski@aep.com

Reference: Determination on Requests for Study Modifications for the Niagara Hydroelectric Project

Dear Mr. Magalski:

Pursuant to 18 C.F.R. § 5.15 of the Commission's regulations, this letter contains the determination on requests for modifications to the approved study plan for Appalachian Power Company's (Appalachian) Niagara Hydroelectric Project No. 2466 (Niagara Project). The determination is based on the study criteria set forth in sections 5.9(b) and 5.15(d) and (e) of the Commission's regulations, applicable law, Commission policy and practice, and Commission staff's review of the record of information.

Background

The study plan determination (SPD) for the project, issued on December 6, 2019, required Appalachian to conduct eight studies and file an initial study report on those studies. On January 11, 2021, Appalachian filed the initial study report. As required by the regulations, the report describes the progress made in implementing the study plan and includes an explanation of reported variances from the study plan and schedule. On January 21, 2021, Appalachian held an Initial Study Report meeting and filed a summary of the meeting on February 5, 2021. Comments on the meeting summary and Initial Study Report were filed by: Roanoke County on March 4, 2021; Roanoke Regional Partnership and Roanoke River Blueway Committee on March 5, 2021; and Roanoke Valley Greenway Commission, Virginia Department of Environmental Quality (Virginia

DEQ), and the U.S. Fish and Wildlife Service (FWS) on March 8, 2021. Appalachian filed reply comments on April 6, 2021.

Comments

Some of the comments received do not specifically request modifications to the approved studies or new studies. This determination does not address these types of responses, which include comments on the presentation of data and results; comments disputing the interpretation of study results; recommendations for protection, mitigation, or enhancement measures; and comments on issues that Commission staff previously addressed in the December 6, 2019 SPD. This determination only addresses specific recommendations to modify the approved study plan.

Study Plan Determination

Pursuant to section 5.15(d) of the Commission's regulations, any proposal to modify a required study must be accompanied by a showing of good cause, and must demonstrate that: (1) the approved study was not conducted as provided for in the approved study plan, or (2) the study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way. As specified in section 5.15(e), requests for new information gathering or studies must include a statement explaining: (1) any material change in law or regulations applicable to the information request, (2) why the goals and objectives of the approved study could not be met with the approved study methodology, (3) why the request was not made earlier, (4) significant changes in the project proposal or that significant new information material to the study objectives has become available, and (5) why the new study request satisfies the study criteria in section 5.9(b).

As indicated in Appendix A, modifications to two studies were requested; one of the requested modifications is approved and one is not required. The bases for modifying the study plan are explained in Appendix B (Requested Modifications to Approved Studies). Commission staff considered all study plan criteria in section 5.9 of the Commission's regulations; however, only the specific study criteria particularly relevant to the study in question are referenced in Appendix B.

Please note that nothing in this determination is intended, in any way, to limit any agency's proper exercise of its independent statutory authority to require additional studies.

If you have any questions, please contact Allyson Conner at allysonconner@ferc.gov or (202) 502-6082.

Sincerely,

Terry L. Turpin
Director
Office of Energy Projects

Enclosures: Appendix A – Summary of determinations on requested modifications to approved studies

Appendix B – Commission staff's recommendations on requested modifications to approved studies and new study requests

APPENDIX A

SUMMARY OF DETERMINATIONS ON REQUESTED MODIFICATIONS TO APPROVED STUDIES (see Appendix B for discussion)

Study	Recommending Entity	Approved	Approved with Modifications	Not Required
Requested Modifications to Approved Studies				
Water Quality Study	FWS, Virginia DEQ		X	
Benthic Aquatic Resources Study	FWS			X

APPENDIX B

STAFF RECOMMENDATIONS ON REQUESTED MODIFICATIONS TO APPROVED STUDIES AND NEW STUDY REQUESTS

Water Quality Study

Background

Appalachian conducted a water quality study to assess the effects of project operation on parameters including temperature and dissolved oxygen (DO). Continuously recording data sondes were placed at eight sites to measure temperature and DO at 15-minute intervals from July 29 through November 10, 2020. These sites included: (1) upstream of the confluence of the Roanoke River with Tinker Creek; (2) Tinker Creek; (3) the upper end of the impoundment; (4) the forebay (surface and bottom); (5) the upper bypassed reach; (6) the lower bypassed reach; and (7) the tailrace (see figure 3-1 of the *Preliminary Water Quality Study Report*). In addition, during the initial deployment and subsequent data download events, discrete multi-parameter water quality measurements of temperature, DO, pH, and specific conductivity were collected at each monitoring location, including vertical profiles at the sites in the impoundment and forebay.

Due to higher than average flows for much of the 2020 study season, which could have led to atypical temperature and DO conditions, Appalachian proposes to reinstall two continuously recording sondes in the bypassed reach and one sonde in the tailrace to measure temperature and DO from July through September of 2021.

Requested Study Modifications

Study modification requests were filed by the U.S. Fish and Wildlife Service (FWS) and by the Virginia Department of Environmental Quality (Virginia DEQ). We address the requested modifications separately below.

1. *Additional study season*

Requested Study Modification

In its comments on the Initial Study Report (ISR) meeting summary, FWS recommends that the entire Water Quality Study be repeated in 2021. FWS states that an additional study season is needed because data were not collected or available for approximately 50% of the planned 2020 study period, data that were collected are not representative of normal conditions at the project because precipitation and flow conditions were higher than average in 2020, and the data that were collected for

approximately 2 months (September 8 through November 10) cannot be used to assess project operational effects on water quality because the project was not operating during this period.

Comments on Requested Study Modification

In its reply comments, Appalachian states that it agrees that flow conditions in 2020 were wetter than normal, but that the wetter than normal conditions only affected temperature and DO in the bypassed reach and tailrace, but not in the forebay, impoundment, and upstream of the impoundment.

Regarding the forebay water quality monitoring, Appalachian asserts that the 2020 forebay water quality data represent water quality for the "worst-case" scenario, because 100 percent of the inflow to the project in the late summer/fall of 2020 was routed into the bypassed reach rather than through the forebay and powerhouse. Therefore, the forebay was stagnant and subject to poor water quality caused by water temperature and DO stratification. Appalachian asserts that during a more typical year when the units are operating, temperature and DO stratification in the forebay area is minimized because flow is routed to the powerhouse. Therefore, in lieu of conducting additional continuous monitoring in the forebay, Appalachian proposes to collect water quality profile data (temperature, DO, pH, and specific conductivity) at the forebay monitoring location when it conducts equipment checks and data downloads for the bypassed reach and tailrace monitoring locations (i.e., approximately every 2 weeks).

Regarding the need for additional monitoring in the impoundment and further upstream, Appalachian states that it reviewed the historical water quality record for the U.S. Geological Survey (USGS) gage on the Roanoke River at Thirteenth Street Bridge (No. 02055080), which is at the upstream end of the project impoundment. Appalachian observed that since at least 2008, which was the third driest year on record, water quality has been relatively constant regardless of flow and precipitation. Appalachian therefore concludes that water quality data collected in the impoundment and further upstream in 2020 are representative of water quality at and near the project under very low- and high-flow conditions. In lieu of reinstalling continuously recording sondes in the upper end of the impoundment, Tinker Creek, and the Roanoke River upstream of the confluence with Tinker Creek, Appalachian proposes to include 2021 water quality data (temperature, DO, pH, and specific conductivity) recorded at both the Thirteenth Street Bridge USGS gage and USGS gage at Tinker Creek above Glade Creek (USGS 0205551614) in the Updated Study Report (USR).

Discussion and Staff Recommendation

Additional water quality monitoring in the project tailrace and bypassed reach is warranted given the abnormal flow conditions downstream of the project dam during the

2020 study season as described above. The additional continuous DO and temperature monitoring proposed for the tailrace and bypassed reach should provide sufficient information on the effects of project operation on bypassed reach and tailrace DO and temperature.

Regarding the need to resample the forebay in 2021, data provided in the ISR demonstrates that while the project was operating, temperature and DO were similar at the surface and bottom of the forebay confirming Appalachian's assertion that little to no temperature and DO stratification occurs while the project is generating. The data also show that during the first week of the powerhouse outage, DO decreased in the forebay, particularly at the bottom confirming that DO stratification occurs when the project does not operate for an extended period as occurred in 2020. Therefore, the forebay water quality data gathered in 2020 during an extended period of powerhouse shutdown does represent the "worst-case" scenario, and therefore, another full season of continuous water quality monitoring in the forebay is unnecessary. The proposed discrete, biweekly collection of water quality data in the forebay in 2021 would require relatively low effort and could be used to confirm the aforementioned conclusions reached from the 2020 data collection.

Due to the proximity of the USGS gages to the upper extent of the project impoundment, Appalachian's proposal to analyze 2021 continuous monitoring data from the USGS gages rather than re-installing its own sondes at the three most upstream locations is reasonable, particularly since the powerhouse outage is unlikely to have influenced water quality at the upstream locations as demonstrated above by Appalachian. Therefore, we concur with Appalachian's proposal to include 2021 water quality monitoring data from the two upstream USGS gages in the USR in lieu of conducting additional water quality monitoring in the impoundment and further upstream.

In summary, we recommend that Appalachian conduct the proposed continuous monitoring in the bypassed reach and tailrace in 2021, as well as the discrete, biweekly collection of water quality data in the forebay. Therefore, we do not recommend modifying the study plan to repeat continuous water quality monitoring at the three upstream or forebay monitoring locations.

2. *Length of study season*

Requested Study Modification

Virginia DEQ and FWS recommend that temperature and DO monitoring in the bypassed reach be extended through October 2021 to ensure that water quality during low-flow periods is captured.

Comments on Requested Study Modification

In its reply comments, Appalachian states that due to the effort and costs associated with extending the field sampling for an additional month, it proposes to only extend the sampling through October if water temperatures do not begin decreasing by the end of September. Appalachian further states that it does not believe that continued sampling in the bypassed reach beyond September is needed unless no water temperature and DO data are collected at the currently required bypassed reach minimum flow of 8 cfs during the July through September period and weather forecasts indicate that bypassed reach flows of about 8 cfs are likely in October.

Discussion and Staff Recommendation

The study plan determination (SPD) required water quality monitoring through October 31, 2020, based on historical data indicating that low-flow conditions in the Roanoke River often extend into October. As Appalachian acknowledges, flows in the bypassed reach during the 2020 water quality study season were not representative of typical conditions at the project, in part due to the inoperability (i.e., held in constant open position) of the trash sluice gate and the extended powerhouse outage. Therefore, monitoring through October would ensure that Appalachian captures the entire period where low flows and/or high temperatures may occur, which is necessary to inform potential license requirements. Therefore, consistent with the SPD, we do not agree with the triggers for monitoring through October as proposed by Appalachian and instead recommend that the continuous monitoring in the bypassed reach and tailrace continue through October 31 during the 2021 study season.

3. Equipment maintenance

Requested Study Modification

FWS recommends that Appalachian check and clean data sondes weekly during the 2021 study season to avoid the loss of water quality data from biofouling.

Comments on Requested Study Modification

Appalachian proposes to download the data and check and clean the data sondes at approximately 2-week intervals and would adjust accordingly depending on the degree of biofouling observed in the field. In its reply comments, Appalachian states that the chosen frequency of equipment checks is based on observations during the 2020 field season. Biofouling was less prevalent at the non-impoundment monitoring locations during the 2020 data collection, and performing cleaning on a weekly basis is unnecessary and would result in a significant increase in cost and effort.

Discussion and Staff Recommendation

While biofouling of the data sondes resulted in some data loss in 2020, as Appalachian noted, it was less of an issue at the downstream locations that Appalachian is required to study again in 2021. Appalachian's proposal to check and clean the data sondes at 2-week intervals and to adjust as needed is reasonable and should be frequent enough to ensure the data sondes continue to operate. We recommend that Appalachian increase the frequency to weekly only if biofouling is found to hamper data collection.

Benthic Aquatic Resources Study

Freshwater Mussel Survey

Background

As part of the Benthic Aquatic Resources Study, Appalachian conducted a freshwater mussel survey to characterize mussel habitat and community composition in the project area in the fall of 2020. A combination of transect and abbreviated surveys were conducted following methods modified from the "Draft Freshwater Mussel Guidelines for Virginia."[1,2] Transect surveys were performed at eight sites spaced every 500 meters within the impoundment and immediately upstream of the impoundment. Linear transects were established across the width of the impoundment, perpendicular to stream flow, and ranged from 30 to 75 meters in length. Surveyors searched transects for mussels at an approximate rate of one minute per square meter in heterogeneous substrates. Methods used to locate mussels included wafting and raking sediment, searching through aquatic vegetation, and overturning cobble, boulder, and woody debris. No live mussels were recorded in the transect surveys.

Surveys were also conducted in five reaches of riffle and/or run habitats ranging from 315 to 500 meters in length in: (1) Tinker Creek, (2) Wolf Creek, (3) the Roanoke River upstream of the impoundment, (4) the bypassed reach, and (5) below the tailrace using viewscopes, snorkeling, and surface supplied air.[3] Surveyors targeted habitat(s)

[1] FWS and Virginia DGIF. 2018. Draft Freshwater Mussel Guidelines for Virginia. Virginia Field Office, Gloucester, Virginia.

[2] Transect surveys were conducted in pool habitats and include searching all habitat along the entire length, while abbreviated surveys were conducted at sites with mixed habitat and included searching for mussels in suitable habitat throughout the site.

[3] The use of surface supplied air is a sampling technique whereby the diver is supplied breathing gas from the surface, either from the shore or from a diving support vessel.

suitable for the occurrence of freshwater mussels and searched those areas at an approximate rate of one minute per square meter in heterogeneous substrates using similar methods as those used in the transect surveys. A total of four Eastern Elliptio (*Elliptio complanata*) were observed and collected during the abbreviated surveys in Tinker Creek and the Roanoke River upstream of the impoundment.

Requested Study Modification

In its comments on the ISR meeting summary, FWS notes that there is a large riffle at the lower extent of the most downstream survey area ("UNIO-Tailrace Survey Area") that includes a continuous area of stable gravel/cobble substrate and may represent the beginning of suitable mussel habitat that was not surveyed. In addition, FWS states that the location of the UNIO-Tailrace Survey Area differs from the location proposed in the approved study plan. Specifically, the UNIO-Tailrace Survey Area was to start 500 meters downstream of the tailrace and extend a distance of 500 meters to a point 1,000 meters downstream of the tailrace. However, figure 1 in the Benthic Aquatic Resources Study Report shows the UNIO-Tailrace Survey Area started approximately 375 meters rather than 500 meters downstream of the tailrace with the result that the survey ended 875 meters instead of 1,000 meters downstream of the tailrace. FWS states that this appears to have resulted in the first area of suitable mussel habitat not being surveyed and recommends that an additional 500 meters of area below that which was surveyed in 2020 be surveyed for freshwater mussels in 2021.

Comments on Requested Study Modification

In its reply comments, Appalachian states that the figure in the ISR illustrating the UNIO-Tailrace Survey Area contained an outdated shapefile created during the study planning process and did not accurately represent the area that was actually surveyed. In its response comments, Appalachian provided new figures illustrating the correct location and extent of the UNIO-Tailrace Survey Area that was evaluated during the 2020 field effort. The revised figures show that the survey was initiated approximately 500 meters downstream of the tailrace and extended 500 meters downstream, thereby covering the full extent delineated in the approved study plan. Appalachian states that it is not proposing to conduct additional mussel surveys as requested by FWS because the sampling locations and survey methodology were developed in consultation with staff from the Virginia Department of Wildlife Resources, the results of the 2020 survey indicate mussel density and diversity in the Roanoke River near the project is very low, and that the requested expanded area is beyond the extent of hydraulic influence of project operations.

Discussion and Staff Recommendation

The additional information provided by Appalachian in its reply comments indicates that it surveyed the full extent of the survey area as proposed in the approved study plan. In addition, while additional suitable mussel habitat may be located further downstream than the area surveyed in 2020, there is no reason to conclude that project operation would affect areas more than 1,000 meters downstream of the tailrace. FWS does not demonstrate the nexus between project operation and freshwater mussel resources in the Roanoke River more than 1,000 meters downstream of the tailrace or explain how the additional mussel survey would inform potential license requirements [section 5.9(b)(5)]. Therefore, we do not recommend modifying the study to require Appalachian to conduct an additional freshwater mussel survey downstream of the project.

Subject: FW: RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Monday, May 10, 2021 4:42 PM
To: McCloskey, John <john_mccloskey@fws.gov>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

Mr. McCloskey,

Good afternoon.
Based on discussions during our group call last week, the Virginia Department of Wildlife Resources and US Fish and Wildlife Service were in agreement that there were no concerns with Appalachian completing the spring benthic macroinvertebrate sampling activities at the Niagara Project. At the end of the call, you took the action item to send over something to Appalachian and HDR that provides documentation of the Service's waiver of the time-of-year-restrictions for Roanoke River instream work during the Niagara Logperch spawning season. If there is not a formal document that is required, can you provide confirmation via email?

The spring index period for benthic macroinvertebrate sampling in Virginia ends on May 31st, so we would like to get the field team scheduled to get in the field as soon as possible.
Can you provide an update on the status of the waiver request? Alternatively, can you reply with your concurrence that Appalachian is granted a waiver of the time-of-year-restrictions on instream work and can move forward with completing the benthic macroinvertebrate spring field sampling, as proposed in the Niagara Project Revised Study Plan?

Again we appreciate the great discussion on the call last week and look forward to hearing from you.

Regards,
Misty

Misty Huddleston, PhD
Associate, SR. Environmental Scientist

HDR
440 S. Church Street, Suite 900
Charlotte, NC 28202-2075
D 704.248.3614 **M** 865.556.9153
Misty.Huddleston@hdrinc.com

hdrinc.com/follow-us

Subject: FW: [EXTERNAL] RE: RSVP for May 25 Racine Updated Study Report Meeting

From: McCloskey, John <john_mccloskey@fws.gov>
Sent: Thursday, May 13, 2021 1:20 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Cc: McCorkle, Richard <richard_mccorkle@fws.gov>
Subject: Re: [EXTERNAL] RE: RSVP for May 25 Racine Updated Study Report Meeting

Hi Jon,

I am still working on the waiver. It is more complicated than I thought it would be. I hope to get this issue resolved soon. When I do, I will let you know.

John.

****

John McCloskey

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

6669 Short Lane

Gloucester, VA 23061

T: (804) 824-2404

F: (804) 693-9032

Work cell (while teleworking): 757-378-8410

Visit us at http://www.fws.gov/northeast/virginiafield
****

From: Jonathan M Magalski <jmmagalski@aep.com>
Sent: Thursday, May 13, 2021 11:15 AM
To: McCloskey, John <john_mccloskey@fws.gov>
Cc: McCorkle, Richard <richard_mccorkle@fws.gov>
Subject: [EXTERNAL] RE: RSVP for May 25 Racine Updated Study Report Meeting

Thanks, John. I'll add you to the meeting invite.

On another note, has any additional consideration been given to the TOYR for the macroinvertebrate sampling at Niagara? HDR and Edge are looking at scheduling the sampling in conjunction with some sampling at another project. Confirmation of the waiver for the macroinvertebrate sampling is much appreciated. Please let me know if you have questions or would like to have a call to discuss.

From: McCloskey, John <john_mccloskey@fws.gov>
Sent: Thursday, May 13, 2021 10:15 AM
To: Jonathan M Magalski <jmmagalski@aep.com>
Cc: McCorkle, Richard <richard_mccorkle@fws.gov>
Subject: [EXTERNAL] RSVP for May 25 Racine Updated Study Report Meeting

Jon,

Confirming that I am planning to participate in the May 25 Racine USR WebEx Meeting from 1-4 p.m.

John.

****

John McCloskey

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

6669 Short Lane

Gloucester, VA 23061

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Subject: FW: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project
Attachments: Niagara Benthic Sample Sites.jpg

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Friday, May 21, 2021 5:42 PM
To: McCloskey, John <john_mccloskey@fws.gov>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: RE: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

John,
Thank you for the follow-up email.
See below for responses to the questions your provided.

- How often will sampling occur? Sampling will occur over a two day period as soon as we have the TOYR waiver approval.
- How much foot traffic along the streambed is expected? During sampling, only one person will be in the water.
- How many people will be walking through the habitat? Only one person. All travel between sites will occur on shore or by canoe to avoid disturbing the streambed to the maximum extent possible.
- How many sites will be sampled? 10 total sites (100 meter transect each) with 5 located in riffle/run (quantitative) habitat and 5 in pool (qualitative) habitat. See attached Figure illustrating proposed sampling locations.
- Exactly what methods they're using? Sampling will be performed following methods detailed in the Virginia Department of Environmental Quality (VDEQ). 2008. Biological Monitoring Program Quality Assurance Project Plan for Wadeable Streams and Rivers. Quantitative and Qualitative methods may include kick nets, dipnets, rock picking, and limited seine hauls to target crayfish.

  Additional details regarding the Project and the proposed sampling effort can be found in the Revised Study Plan at the follow link:
  http://www.aephydro.com/HydroPlant/Niagara

Let us know if there is anything else needed to process this request.
Thanks and have a nice weekend,
Misty

Misty Huddleston, PhD
Associate, SR. Environmental Scientist
D 704.248.3614 **M** 865.556.9153

hdrinc.com/follow-us

From: McCloskey, John <john_mccloskey@fws.gov>
Sent: Friday, May 21, 2021 1:10 PM
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Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: Re: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

Misty,

I discussed the benthic macroinvertebrate study with the endangered species lead for the Roanoke logperch and she needs additional information to determine whether the benthic sampling is likely or not likely to adversely affect RLP. Her request is below:

Understanding the specific project details such as the magnitude, timing, and duration of the impact will help us with our determination. If you have the answers to questions below that will help us understand the impact and ensure a LAA determination is appropriate.

- How often will sampling occur?
- How much foot traffic along the streambed is expected?
- How many sites will be sampled?
- How many people will be walking through the habitat?
- Exactly what methods they're using?

Once you have provided this additional information, she will make a determination on whether or not the sampling is likely to adversely affect RLP and decide whether a waiver can be granted.

John.

****

John McCloskey

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

6669 Short Lane

Gloucester, VA 23061

T: (804) 824-2404

F: (804) 693-9032

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****

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Sent: Monday, May 10, 2021 4:42 PM
To: McCloskey, John <john_mccloskey@fws.gov>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M

Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

Mr. McCloskey,

Good afternoon.
Based on discussions during our group call last week, the Virginia Department of Wildlife Resources and US Fish and Wildlife Service were in agreement that there were no concerns with Appalachian completing the spring benthic macroinvertebrate sampling activities at the Niagara Project. At the end of the call, you took the action item to send over something to Appalachian and HDR that provides documentation of the Service's waiver of the time-of-year-restrictions for Roanoke River instream work during the Niagara Logperch spawning season. If there is not a formal document that is required, can you provide confirmation via email?

The spring index period for benthic macroinvertebrate sampling in Virginia ends on May 31st, so we would like to get the field team scheduled to get in the field as soon as possible.
Can you provide an update on the status of the waiver request? Alternatively, can you reply with your concurrence that Appalachian is granted a waiver of the time-of-year-restrictions on instream work and can move forward with completing the benthic macroinvertebrate spring field sampling, as proposed in the Niagara Project Revised Study Plan?

Again we appreciate the great discussion on the call last week and look forward to hearing from you.

Regards,
Misty

Misty Huddleston, PhD
Associate, SR. Environmental Scientist

HDR
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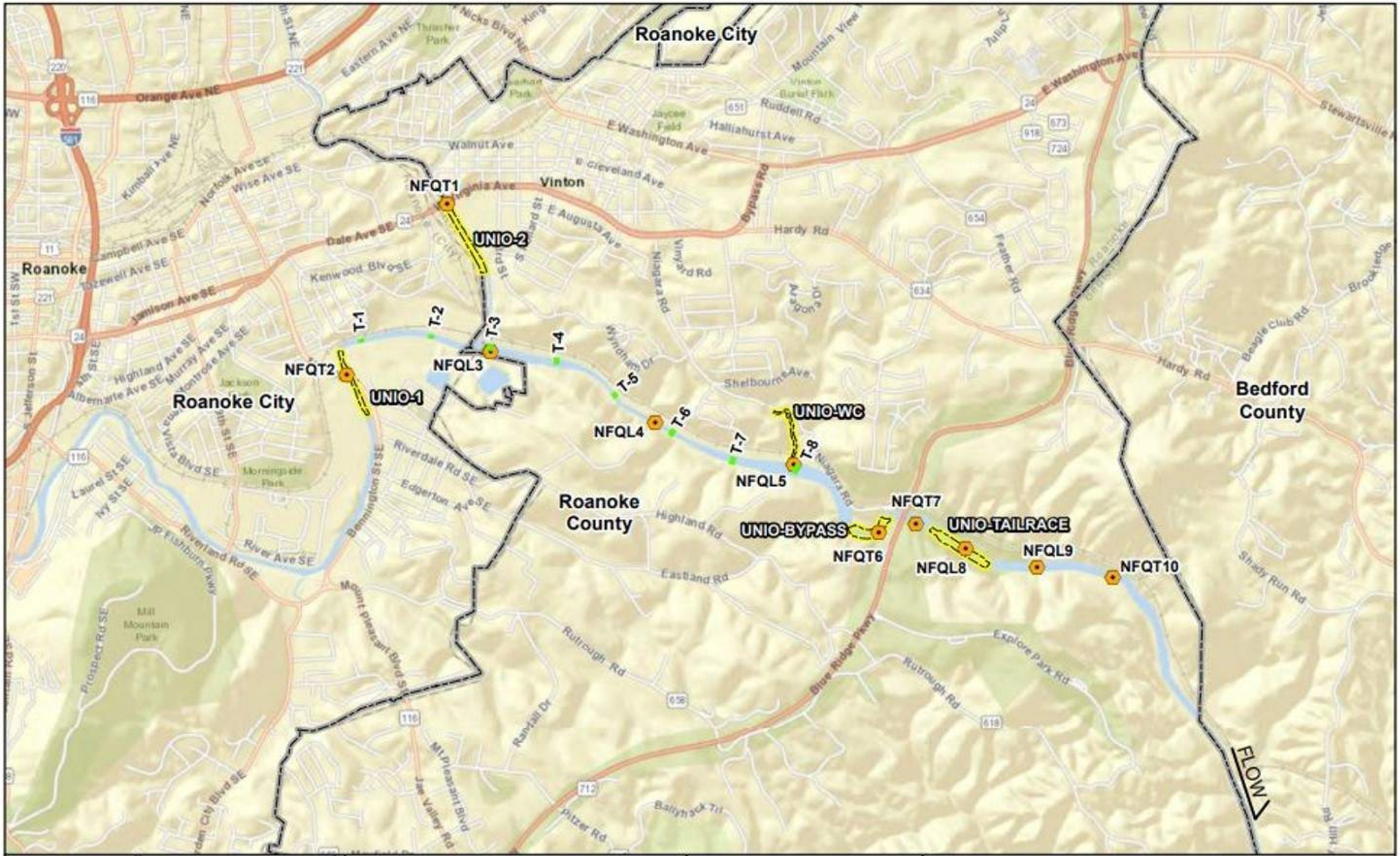
Misty.Huddleston@hdrinc.com

hdrinc.com/follow-us



American Electric Power
Niagara Dam Macroinverebrate Community Study
Figure 1

Overall Niagara project area including quantitative (NFQT) and qualitative (NFQL) macroinvertebrate survey sites and transect (T) and abbreviated (UNIO) mussel survey sites on the Roanoke River in Roanoke County, Virginia

D:\PROJECTS\HDR\HDR2020-0002 Niagara Dam Relicensing\GIS\MXD\Macroinvtbrts\Report_Figs\20201124_Sbmtl\HDR2020-0002_Mcroinvbrts_Fig1_20201124.mxd

From:	Hoskin, Sumalee
To:	Huddleston, Misty
Cc:	Andersen, Troy M; McCloskey, John; McCorkle, Richard; Jon Studio; Kulpa, Sarah; Jonathan M Magalski; Yayac, Maggie
Subject:	RE: [EXTERNAL] RE: Macroinvertebrate Study at Niagara Hydro Project during RLP TOYR
Date:	Wednesday, May 26, 2021 1:00:07 PM

Misty,
To clarify, there is no such thing as a "TOYR waiver" your project, as described, is not likely to adversely affect the Roanoke logperch therefore it can proceed.
Sumalee

Sumalee Hoskin
US Fish & Wildlife Service
6669 Short Lane
Gloucester, VA 23061

sumalee_hoskin@fws.gov
Tel: 804-693-6694 ex. 2414
Fax: 804-693-9032
Visit us at http://www.fws.gov/northeast/virginiafield/

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Wednesday, May 26, 2021 12:55 PM
To: Hoskin, Sumalee <sumalee_hoskin@fws.gov>
Cc: Andersen, Troy M <troy_andersen@fws.gov>; McCloskey, John <john_mccloskey@fws.gov>; McCorkle, Richard <richard_mccorkle@fws.gov>; Jon Studio <jastudio@edge-es.com>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: [EXTERNAL] RE: Macroinvertebrate Study at Niagara Hydro Project during RLP TOYR

Sumalee,
Thank for the information.

Can you confirm that this email transmittal serves as the "waiver of TOYR" for Roanoke Logperch

and that we are allowed to proceed with the macroinvertebrate sampling effort? Thanks,
Misty

Misty Huddleston, PhD
Associate, SR. Environmental Scientist
D 704.248.3614 **M** 865.556.9153

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From: Hoskin, Sumalee <sumalee_hoskin@fws.gov>
Sent: Wednesday, May 26, 2021 12:51 PM
To: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Cc: Andersen, Troy M <troy_andersen@fws.gov>; McCloskey, John <john_mccloskey@fws.gov>; McCorkle, Richard <richard_mccorkle@fws.gov>; Jon Studio <jastudio@edge-es.com>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: Macroinvertebrate Study at Niagara Hydro Project during RLP TOYR

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The proposed benthic macroinvertebrate sampling includes 10 sites. Seven sites are in the mainsteam of the Roanoke River, habitat occupied by the federally listed endangered Roanoke logperch (*Percina rex*). Sampling follows the 2008 Virginia Department of Environmental Quality methodology; per the methodology the sampling period ends May 31. The proposed sampling will occur over a 2-day period during the Roanoke logperch time-of-year restriction (March 15- June 30). Sampling may include standard aquatic dip net (approximately 1-foot wide), kick nets and rock picking. Only one person will be in the water. Travel between sampling sites will occur by canoe or on shore to avoid disturbing the streambed. The approximate width of the Roanoke River at the sampling sites is 115 feet.

Based on the expected amount of streambed that will be disturbed, the short duration of disturbance and the small amount of sediment that will be generated, we believe the effects of the survey on the Roanoke logperch will be insignificant and discountable and the proposed survey is not likely to adversely affect this species.
Sumalee

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sumalee_hoskin@fws.gov

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Subject: FW: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Wednesday, May 26, 2021 9:53 AM
To: McCloskey, John <john_mccloskey@fws.gov>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: RE: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

John,

I have conferred with the field team and we will not be using seine hauls. The field team plans to use the rock picking method, which is also the method they used to perform the fall 2020 crayfish survey at the Niagara Project. So the plan still calls for only one team member to be in the water during the rock picking effort.

At this point it is does not appear that we will have the TOYR waiver in time to get a team deployed and sampling completed by May 31st (the end of the spring index sampling period per VDEQ 2008).
If provided a waiver, we could get the crew deployed and sampling completed within the next two weeks as long as weather and flows are acceptable. Without the waiver, we would not be able to sample until July 2021. Do you or others at FWS have concerns regarding the use of macroinvertebrate data collected outside of the spring index period in support of the Niagara FERC license application?

Thanks,
Misty

Misty Huddleston, PhD
Associate, SR. Environmental Scientist
D 704.248.3614 **M** 865.556.9153

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From: McCloskey, John <john_mccloskey@fws.gov>
Sent: Wednesday, May 26, 2021 8:57 AM
To: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: Re: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

Misty,

Can you provide clarification on the statement that limited seine hauls may be used to collect crayfish? You state that only one person will be in the water during sampling. However, the use of a seine would generally require multiple people to use.

John.

****

John McCloskey

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

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F: (804) 693-9032

Work cell (while teleworking): 757-378-8410

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From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Friday, May 21, 2021 5:41 PM
To: McCloskey, John <john_mccloskey@fws.gov>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: RE: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

John,
Thank you for the follow-up email.
See below for responses to the questions your provided.

- How often will sampling occur? Sampling will occur over a two day period as soon as we have the TOYR waiver approval.
- How much foot traffic along the streambed is expected? During sampling, only one person will be in the water.
- How many people will be walking through the habitat? Only one person. All travel between sites will occur on shore or by canoe to avoid disturbing the streambed to the maximum extent possible.
- How many sites will be sampled? 10 total sites (100 meter transect each) with 5 located in riffle/run (quantitative) habitat and 5 in pool (qualitative) habitat. See attached Figure illustrating proposed sampling locations.
- Exactly what methods they're using? Sampling will be performed following methods detailed in the Virginia Department of Environmental Quality (VDEQ). 2008. Biological Monitoring Program Quality Assurance Project Plan for Wadeable Streams and Rivers. Quantitative and Qualitative methods may include kick nets, dipnets, rock picking, and limited seine hauls to target crayfish.

  Additional details regarding the Project and the proposed sampling effort can be found in the Revised Study Plan at the follow link:
  http://www.aephydro.com/HydroPlant/Niagara

Let us know if there is anything else needed to process this request.

Thanks and have a nice weekend,
Misty

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Associate, SR. Environmental Scientist
D 704.248.3614 **M** 865.556.9153

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From: McCloskey, John <john_mccloskey@fws.gov>
Sent: Friday, May 21, 2021 1:10 PM
To: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: Re: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

Misty,

I discussed the benthic macroinvertebrate study with the endangered species lead for the Roanoke logperch and she needs additional information to determine whether the benthic sampling is likely or not likely to adversely affect RLP. Her request is below:

Understanding the specific project details such as the magnitude, timing, and duration of the impact will help us with our determination. If you have the answers to questions below that will help us understand the impact and ensure a LAA determination is appropriate.

- How often will sampling occur?
- How much foot traffic along the streambed is expected?
- How many sites will be sampled?
- How many people will be walking through the habitat?
- Exactly what methods they're using?

Once you have provided this additional information, she will make a determination on whether or not the sampling is likely to adversely affect RLP and decide whether a waiver can be granted.

John.

****

John McCloskey

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

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F: (804) 693-9032

Work cell (while teleworking): 757-378-8410

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****

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Monday, May 10, 2021 4:42 PM
To: McCloskey, John <john_mccloskey@fws.gov>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; jon Studio (jastudio@edge-es.com) <jastudio@edge-es.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
Subject: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project

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Good afternoon.
Based on discussions during our group call last week, the Virginia Department of Wildlife Resources and US Fish and Wildlife Service were in agreement that there were no concerns with Appalachian completing the spring benthic macroinvertebrate sampling activities at the Niagara Project. At the end of the call, you took the action item to send over something to Appalachian and HDR that provides documentation of the Service's waiver of the time-of-year-restrictions for Roanoke River instream work during the Niagara Logperch spawning season. If there is not a formal document that is required, can you provide confirmation via email?

The spring index period for benthic macroinvertebrate sampling in Virginia ends on May 31st, so we would like to get the field team scheduled to get in the field as soon as possible.
Can you provide an update on the status of the waiver request? Alternatively, can you reply with your concurrence that Appalachian is granted a waiver of the time-of-year-restrictions on instream work and can move forward with completing the benthic macroinvertebrate spring field sampling, as proposed in the Niagara Project Revised Study Plan?

Again we appreciate the great discussion on the call last week and look forward to hearing from you.

Regards,
Misty

Misty Huddleston, PhD
Associate, SR. Environmental Scientist

HDR
440 S. Church Street, Suite 900
Charlotte, NC 28202-2075

D 704.248.3614 **M** 865.556.9153
Misty.Huddleston@hdrinc.com

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From: McCloskey, John
To: Huddleston, Misty
Cc: Kulpa, Sarah; jon Studio (jastudio@edge-es.com); Jonathan M Magalski; Yayac, Maggie
Subject: Re: [EXTERNAL] RE: TOYR Waiver for Macroinvertebrate Study at Niagara Hydroelectric Project
Date: Wednesday, May 26, 2021 8:56:50 AM

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Misty.Huddleston@hdrinc.com

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Subject: FW: [EXTERNAL] RE: Macroinvertebrate Study at Niagara Hydro Project during RLP TOYR

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Sent: Wednesday, May 26, 2021 1:00 PM
To: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Cc: Andersen, Troy M <troy_andersen@fws.gov>; McCloskey, John <john_mccloskey@fws.gov>; McCorkle, Richard <richard_mccorkle@fws.gov>; Jon Studio <jastudio@edge-es.com>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
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Cc: Andersen, Troy M <troy_andersen@fws.gov>; McCloskey, John <john_mccloskey@fws.gov>; McCorkle, Richard <richard_mccorkle@fws.gov>; Jon Studio <jastudio@edge-es.com>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>
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Tel: 804-693-6694 ex. 2414
Fax: 804-693-9032
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~~~~~~~~~~~~~~~~~~~~~~~~

Subject: FW: AEP Niagara Hydroelectric Project - Recreation Stakeholder Mtg Summary and Online Survey Link
Attachments: Niagara Rec Stakeholder Meeting Summary_04.20.21.pdf; Niagara Recreation Online Survey Sign.pdf

From: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>
Sent: Friday, June 4, 2021 7:30 PM
To: rcaywood@roanokecountyva.gov; Lindsay Webb <LWEBB@roanokecountyva.gov>; Anita McMillan <amcmillan@vintonva.gov>; riverdancer1943@gmail.com; Amanda McGee <amcgee@rvarc.org>; Liz Belcher <LBELCHER@roanokecountyva.gov>; Doug Blount <DBLOUNT@roanokecountyva.gov>; pete@roanoke.org; dawn_leonard@nps.gov; Rhur, Roberta <robbie.rhur@dcr.virginia.gov>
Cc: Elizabeth B Parcell <ebparcell@aep.com>; Jonathan M Magalski <jmmagalski@aep.com>; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>; Frank Simms <fmsimms51@gmail.com>
Subject: AEP Niagara Hydroelectric Project - Recreation Stakeholder Mtg Summary and Online Survey Link

Good evening Niagara Hydroelectric Project Recreation Stakeholders,

I hope everyone is having a good start to your summer and enjoyed the holiday weekend last week. Attached for your review and files please find a summary of our virtual meeting on April 20th. The attached pdf also includes copies of the individual presentations. Please let us know if you have any questions or comments on the summary. Please also accept my personal apologies for the delay in getting this summary over to you; we've been busy kicking off this year's field season.

Attached you will also find the flyer with link and instructions to the online survey, which will run through this fall. Please share this information with your stakeholder and community groups.

On behalf of Appalachian Power Company, thank you again for your participation in this process, and have a great weekend.

Sarah Kulpa
Project Manager

HDR
440 S. Church Street, Suite 900
Charlotte, NC 28202-2075
D 704.248.3620 **M** 315.415.8703
sarah.kulpa@hdrinc.com

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Meeting Summary

Project:	Niagara Hydroelectric Project (FERC No. 2466)
Subject:	Recreation Stakeholder Meeting
Date:	Tuesday, April 20, 2021
Location:	WebEx
Attendees:	Amanda McGee (Blueway Committee) Anita McMillan (Town of Vinton) Bill Tanger (FORVA) Lindsay Webb (Roanoke County) Liz Belcher (Roanoke Valley Greenways) Roberta Rhur (VDCR) Nathaniel McClung (Town of Vinton) Pete Eshelman (Roanoke Regional Partnership) Richard Caywood (Roanoke County) Doug Blount (Roanoke County) Jonathan Magalski (Appalachian) Elizabeth Parcell (Appalachian) Sarah Kulpa (HDR) Maggie Yayac (HDR) Kerry McCarney-Caste (HDR) Frank Simms (YES)

Appalachian and HDR Introduction

J. Magalski – Opening remarks, housekeeping items, and introductions

M. Yayac – Safety moment - distracted driving

S. Kulpa briefly discussed the relationship of recreation facilities and the FERC relicensing process, the difference between Project and Non-project Facilities and how they are included or not included in the FERC Project Boundary, and what is "required" under the license. Facilities that are required to be maintained during the term of the license are termed "Project" facilities. Non-Project facilities are near the Project Boundary but are not under FERC's jurisdiction or typically maintained or operated by the licensee.

M. Yayac gave a high level overview of the Recreation Study presented in the Initial Study Report (ISR) and stated that there is one Project Facility and three Non-Project facilities as described in the Revised Study Plan for the Recreation Study. She showed the updated Existing Recreation Facilities Project Map and asked for comments.

B. Tanger voiced two concerns:

1) Roanoke River Trail – there is an informal trail off of the Roanoke River Trail that goes straight down to an area where boaters can put boats in closer to the dam.
2) In FORVA'S 2019 comments, they asked if there is a way to coordinate special releases from the Spring Hollow reservoir upstream.
    - J. Magalski asked where this reservoir is located. B. Tanger noted it would need to be a multijurisdictional effort. S. Kulpa mentioned that neither Appalachian nor FERC has the ability to require actions by another dam owner, but that Appalachian has the ability to coordinate operation of the Niagara Project (within the limits authorized by the license) with upstream releases that can be arranged or provided by others.

L. Webb asked HDR/ Appalachian to change the two yellow parcels (Virginia Recreation Facility Authority [VRFA] owned) just south of the bypass to orange because they are leased and considered Explore Park parcels (Action Item). M. Yayac agreed. **Update**: this edit has been made to the map.

A. McGee asked about whether this map would cover proposed recreation facilities. M. Yayac noted that this map is specific to existing amenities to get a baseline of the recreation facilities/opportunities in the Project area. S. Kulpa mentioned that the USR will take into account proposed recreation facilities, as applicable, and this meeting's intent is to understand what recreational opportunities stakeholders are pursuing or interested in.

M. Yayac went over the Recreation Study tasks status. She mentioned that YES has been on-site at the Roanoke River Overlook and Trail gathering survey data ahead of the Blue Ridge Parkway closure.

L. Belcher asked how users are supposed to find out about the online survey. E. Parcell mentioned that there are signs posted around the area; however, L. Belcher mentioned that people aren't likely to fill this out in the woods and will forget by the time they leave. P. Eshelman agreed. B. Tanger added that stakeholders could consider running advertisements in local newspapers. F. Simms noted that when interviewing people at the facilities – if people aren't interested in doing the survey at that time, he provides a handout with the information. A. McGee stated that it would be good to have the information in several places to remind people multiple times. L. Webb mentioned that Roanoke County currently has the link up on their social media page and includes it in their public newsletters. S. Kulpa stated that any help would be greatly appreciated in getting the word out for the recreation online surveys. E. Parcell will look into posting about the online survey on the Smith Mountain Facebook page.

Action Item: Appalachian to send an email to the core team with instructions and a link to the survey to help push that out to internal teams and stakeholder groups.

R. Rhur asked how much use the Project dam portage received and noted it's her understanding it is not very user-friendly. S. Kulpa stated the portage is useable but the location for the takeout may be the problem and asked the stakeholders for feasible alternatives or improvements for the portage. B. Tanger interjected that the way one gets into the river could be improved – as it is now, it's very steep and rocky – and mentioned that perhaps installing a cable at the take-out of the dam extending down to the downstream put-in (with a boat clip to slide the boats along) might be a solution on river-left. S. Kulpa noted that HDR/ Appalachian have no direct experience in installation of this type of system at portage sites; however, HDR/ Appalachian would be interested in learning about others' experiences/efforts at other facilities.

S. Kulpa went over upcoming ILP Milestones.

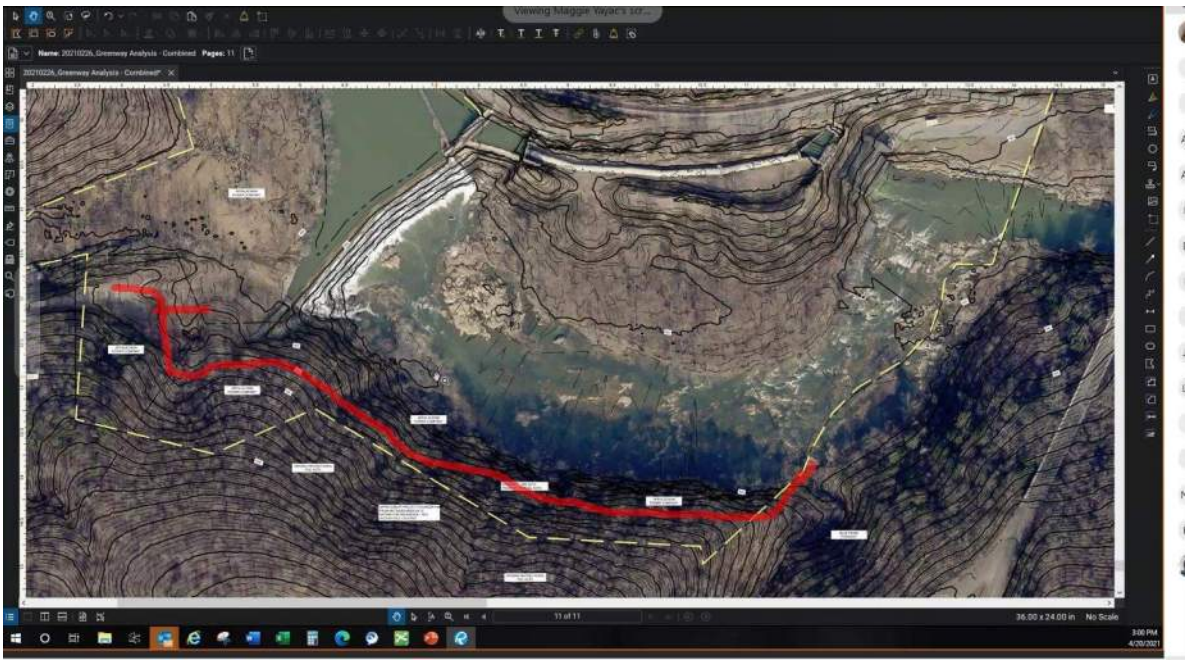
E. Parcell briefly discussed the April 2021 Site Visit with F. Simms.

M. Yayac showed a figure of the Project Boundary that included property owners (Roanoke Co. publicly available data) and topographic lines. L. Webb stated Dawn Leonard is a good contact for Blue Ridge/National Park Service (M. Yayac confirmed she was invited to this meeting). L. Webb also noted that Roanoke County has a 99-year lease on the VRFA parcels.

L. Belcher and B. Tanger talked about public access / roadblocks as far as access on river-right, including the biggest barrier to access the Holland Heirs property (3124 highland Road – 46 acres).

B. Tanger noted that on river-right with improvements, boaters could take-out near the right abutment above the dam, follow a portage trail and put-in below the dam in the bypass, which could be constructed without access to Holland Heirs property. However, if a parking lot was constructed by the right abutment (which is one idea the stakeholders have) access to the Holland Heirs property would be necessary. J. Magalski stated that Appalachian would be interested to understand more details on this proposal and wondered if the trail would be possible because of the steep terrain.

L. Belcher drew on the map a proposed portage trail that may be possible on river-right and would not access National Park Service land (screenshot below). B. Tanger stated he wasn't so much talking about a trail but more of a short portage path to a put-in directly below the dam. F. Simms stated that during low flows, portaging on river-right into the bypass would be incredibly challenging due to the terrain. J. Magalski noted safety concerns with portaging directly below the dam.



Stakeholder Presentations (see attached slides for additional details)

<u>L. Webb – Roanoke County</u>

- Virginia Outdoors Plan 2018
- Roanoke Valley-Alleghany Recreational Planning Region
- Overview of Explore Park
- Future Riverside Village – Adventure Plan
- Recreational Use of the Roanoke River, including documented vehicle counts
- Proposed East Roanoke River Greenway traverses from Roanoke City to Explore Park
- Extend Greenway on south side of river (note there is a railroad on the northside) however, lots of residential properties to cross and rely on Appalachian for support to stay within their property as much as possible.

    - S. Kulpa noted that if the Greenway were to be brought into the Project license (and boundary, and FERC jurisdiction) as a required development/enhancement, this would subject future expansion to FERC approvals and would place the burden of Greenway expansion and maintenance on Appalachian if the County were to no longer be able to pursue. Keeping the Greenway as a non-Project facility gives Appalachian and the County more flexibility and streamlines development process.
- Roanoke County Recreation Requests:
    - Support Explore Park
    - Support Roanoke River Greenway
    - Support Roanoke River Blueway
    - Support Trash and Debris Clean-up efforts

A. McGee – Roanoke River Blueway Committee

- Roanoke River Blueway – extends 45 miles and crosses many jurisdictions
- Water access ranked as third greatest need for recreation sources in the Roanoke region
- Economic development
- 13th Street Bennington – parking lot provides connection to Tinker Creek Greenway and is the last take-out on the Roanoke River above the dam. Planned improvements to portage.
- Tinker Creek improvements – Blueway is working on signage improvements at this location and across all access points.
- Downstream Blue Ridge Parkway Roanoke River Overlook
- Connectivity to Explore Park/Blueway disrupted by Niagara dam especially since the portage is not very easy to use. Also talked about poor signage and historical cart that may have move boats around.
    - Liz Parcell noted she helped with signage of the boat cart donated by FORVA, but unfortunately it was quickly stolen.
- Blueway request updates to existing portage – important to the region and water resources
- Greenway users should be considered recreation stakeholders

B. Tanger – FORVA Requests:

1. River-left – engineering solutions; perhaps a zip line/cable concept to transport boats from above to below the dam.

2. River-right – try to get access to Holland Heirs property but if not, engineering design to get a short switchback trail around river-right and portage into bypass.

3. River access off Roanoke River informal trail – people have been dragging boats and there is sloughing/erosion of the banks (informal trail). Would be helpful to formalize trail, with steps or switchbacks.

4. Coordinate additional flow releases from Spring Hollow (originally owned by Roanoke County, now managed by Western Virginia Water Authority) to then release at Niagara. Spring Hollow was built as a back-up for drinking water. (As follow-up to this discussion,

Appalachian's consultant located the Clifford D. Craig Dam at Spring Hollow Reservoir, which is operated by the Western Virginia Water Authority – geographic coordinates are 37.231224196 N, 80.1728163958 W. At full pond Spring Hollow Reservoir holds 3.2 billion gallons of water and has a surface area of 158 acres.

S. Kulpa asked Bill for his thoughts regarding tradeoffs/benefits between portage improvements on river-right or river-left, in terms of which may be more feasible and used by the public. B. Tanger noted that if measures (e.g., cable) could be installed at river-left to make that an easier portage, it may be the more cost-effective solution and receive more use because use of the put-in below the tailrace is not dependent on bypass reach flows. S. Kulpa confirmed that the existing portage trail does not require crossing the railroad tracks during portage on river-left.

Liz Belcher – Roanoke County

- Regional Perspectives of why Roanoke River Greenway is important. Concerned that Appalachian did not consider adding the greenway to the Recreation Inventory study.
    - S. Kulpa stated that Appalachian does not discount the importance of the Greenway and appreciates its value to the community, visitors to the area, and the County. However, the aim of the inventory was to address and understand use of the facilities more directly related to Project operations and amenities. As previously discussed, Appalachian does not believe it is in any entities' best interest to tie Greenway development to the license, which would at a minimum delay activities for the next phase to 2024. Appalachian will support development of the Greenway where it is not incompatible with uses of or present unacceptable public safety risk on lands owned by Appalachian.
- Progress on Roanoke River Greenway since 2018 – working with Appalachian on right-of-way for the Greenway along Appalachian's property has not produced results.
    - L. Parcell clarified she has been working with L. Webb to move along the process and it is her understanding Roanoke County is working on environmental permitting. The next phase of the Greenway expansion may require a conveyance (easement) of minor amounts of land within the Niagara Boundary. Appalachian is able to request approval of this conveyance from FERC in advance of the new license issuance, but that request does require detailed information about what is proposed in terms of construction activities/disturbance and protection measures.
- L. Belcher stressed that more users are coming to the region and use is going to increase in the next few years. We need to be planning for it.
- Trash management – can't get trash out of the water and carry it away plus cannot get a vehicle down there. This is a good opportunity to improve Appalachian's reputation.

S. Kulpa – Next Steps

J. Magalski requested slides of the presentations.

A. McMillian added that help from Appalachian with the trash would be appreciated. Also asked E. Parcell regarding improvements to the Niagara access road. E. Parcell noted there are no plans to open it up to the public. A. McMillan's concern was more for EMS to be able to get through. E. Parcell said she would follow up with emergency services to ask about their current access. **Update**: Emergency personnel have access/a key into the Project.

B. Tanger asked that the online survey instructions are provided as one-page PDF that he could hand out at meetings.

L. Belcher requested that Appalachian schedule a meeting with the County regarding the Greenway "Non-Project" status. E. Parcell said that she and L. Webb will continue to work together.

Meeting Agenda

Topic	Schedule
Welcome and Introduction	2:00 PM – 2:10 PM
Safety Moment	2:10 PM – 2:15 PM
ISR Recap and upcoming milestones, Recreation map updates and April site visit	2:15 PM – 2:45 PM
Roanoke County Presentation	2:45 PM – 3:00 PM
Blueway Presentation	3:00 PM – 3:15 PM
FORVA Presentation	3:15 PM – 3:30 PM
Greenway Presentation	3:30 PM – 3:45 PM
Discussion and Q&A	3:45 PM – 4:00 PM

Recreation Facilities – Relationship to FERC License

- FERC's **policy** is to seek the ultimate development of the recreational resources of all projects, consistent with the needs of the project area and the primary purposes of the project and taking into account, among other things, Project economics.
- Licenses are issued with standard conditions **reserving FERC authority** to require the licensee to undertake additional recreational development, should circumstances warrant.
- The Commission requires licensees of most projects to submit for approval a **plan** for ensuring the development and maintenance of adequate public recreational facilities.

Niagara Hydroelectric Project

Recreation Stakeholder Meeting
April 20, 2021

Safety Moment – Distracted Driving Month

42,060 people are estimated to have died in motor vehicle crashes in 2020.

- The preliminary estimated rate of death on the roads last year spiked 24% over the previous 12-month period, despite miles driven dropping 13%.
- An estimated 4.8 million additional roadway users were seriously injured in crashes in 2020, with an estimated cost to society of $474 billion.
- Here are some immediate life-saving measures that would put us on a road to zero deaths:

What action can you take?
Never drink and drive! Always have a designated driver or utilize a ride share option (such as Uber) if you will be drinking.
Never exceed the speed limit and follow all signage.
Silence your phone or stow it out of sight. Don't text and drive. Nothing is more important than your safety.
Click it or ticket! Always wear a seatbelt, no exceptions.
A helmet should always be worn when riding a motorcycle, regardless of whether it is a law or not.

Recreation Study

Study Goal: to determine the need for enhancement to the existing recreation facility, or the need for additional recreational facilities, to support the current and future demand for public recreation in the Study Area.

Existing Project and Non-Project facilities:

- Project Canoe Portage Trail (Project Facility) includes a take-out and put-in below the Niagara dam.
- Tinker Creek Canoe Launch (Non-Project Facility) is upstream of the Niagara dam.
- The Roanoke River Overlook and Trail (Non-Project Facility) includes a short-inclined trail and access to fishing in the bypass reach.
- Rutrough Point (Non-Project Facility) is 3RM downstream from the Niagara dam.

Recreation Study

Study Status

- Appalachian has commenced the Recreation Study in accordance with the RSP and the Commission's SPD.

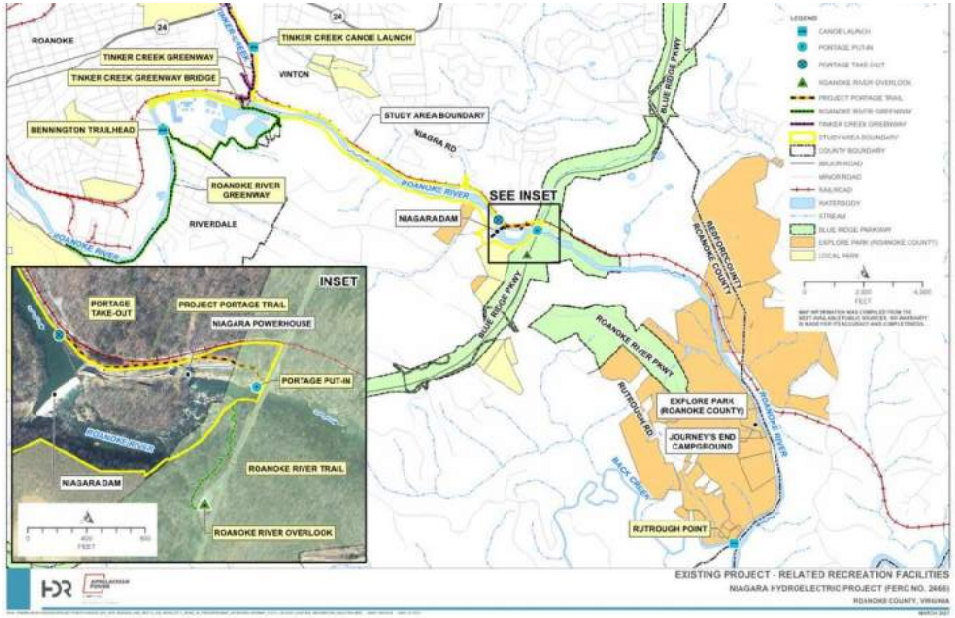
Task	Status
Recreation Facility Inventory and Condition Assessment	Completed in January 2020.
Existing and Future Recreational Opportunities	Stakeholder meeting – April 20, 2021.
Recreation Visitor Use Online Survey	Preliminary data provided. Survey has been extended through October 2021.
Recreational Use Documentation	Postponed until May 2021.
Aesthetic Flow Documentation	Completed (potential for one more visit to capture bypass reach minimum flow conditions in 2021).
Recreational Flow Release Desktop Evaluation	Completed in November 2020. Continue to evaluate in 2021.

BOUNDLESS ENERGY

Recreation Facilities – Relationship to FERC License

- **Recreation facilities**, is a comprehensive term which includes both infrastructure (i.e., parking, restrooms, access paths, docks, etc.) and amenities (i.e., boat launches, picnic areas, campgrounds, trails, etc.).
- While a variety of recreation facilities may exist within the project boundary, only those required by the license (or Recreation Plan) are considered Commission-approved (or "**Project Facilities**").
- Typically, **Project Facilities** are incorporated into the **project boundary** and the licensee is ultimately responsible for the construction, operation, and maintenance of the recreation facilities.
- Other recreation facilities at or in the vicinity of the project which are not necessarily required by FERC may include state parks, municipal and/or county agencies, and/or non-project uses at the project ("**Non-Project Facilities**"). The licensee is not responsible for operation and maintenance of such facilities.

BOUNDLESS ENERGY



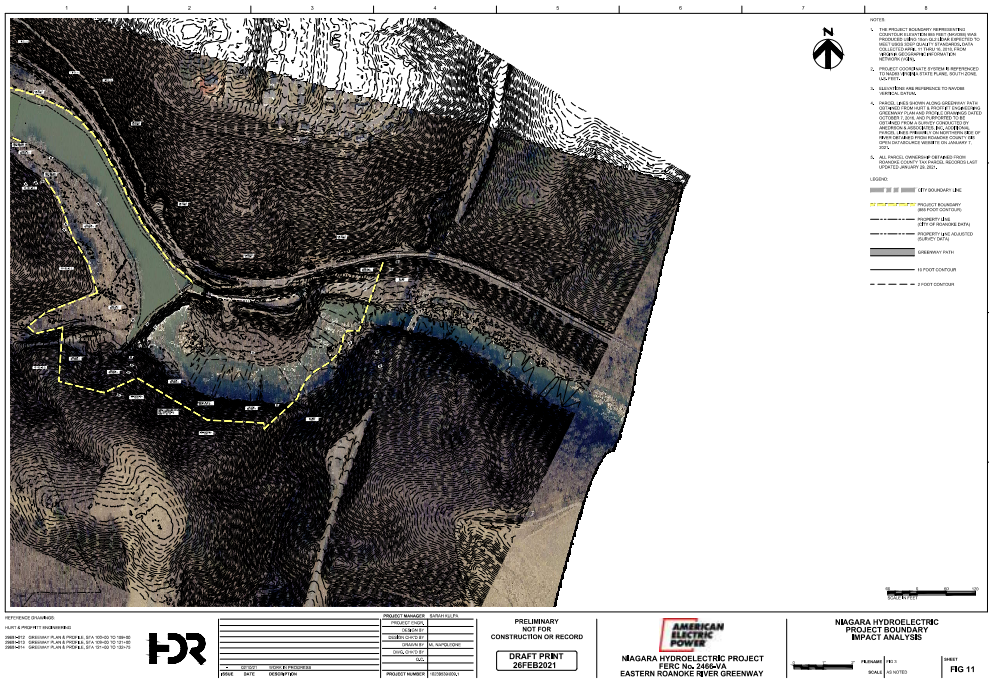
BOUNDLESS ENERGY

April Portage Site Visit

Former Laydown Area, Facing South Dam Abutment

Facing Away From South Dam Abutment – Towards Hill

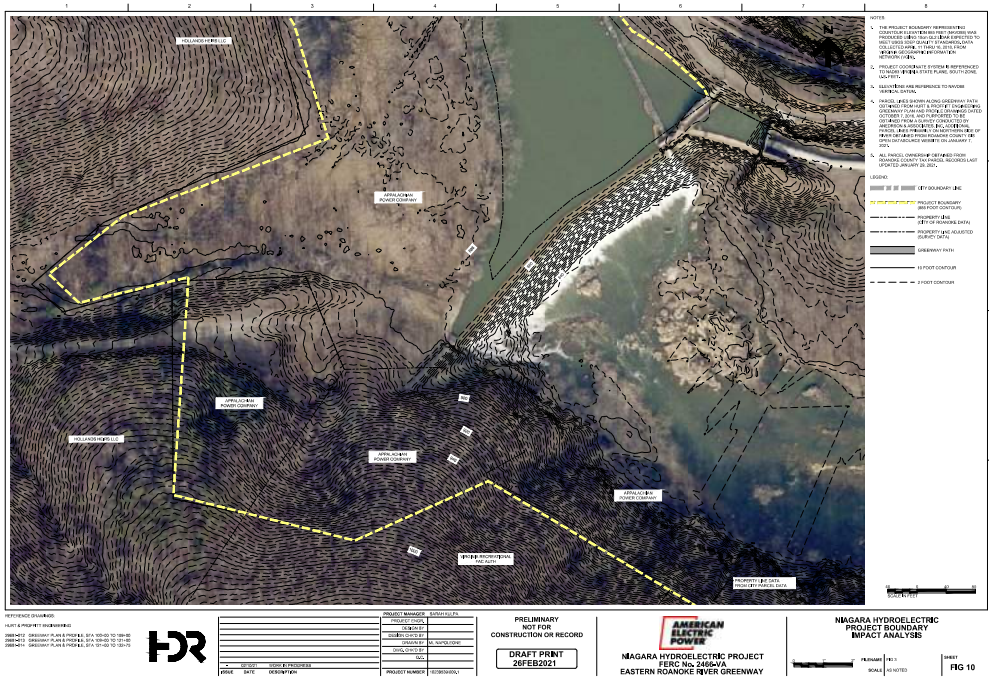
BOUNDLESS ENERGY



Upcoming ILP Milestones

Date	Milestone
January 21, 2020	Appalachian Hosts ISR Meeting (18 CFR §5.15(c)(2))
February 5, 2021	Appalachian File ISR Meeting Summary (18 CFR §5.15(c)(3))
March 7, 2021	Stakeholders File Disagreements with ISR Meeting Summary (18 CFR §5.15(c)(3)) (if necessary)
April 6, 2021	Appalachian File Response to ISR Meeting Summary Disagreements (18 CFR §5.15(c)(5)) (if necessary)
May 6, 2021	**FERC Provide Determination on Disputes (18 CFR §5.15(c)(6)) (if necessary)**
Spring – Fall 2021	Appalachian Conduct Second Year of Studies
October 1, 2021	**Appalachian File Draft License Application (DLA) (18 CFR §5.16(a))**
December 5, 2021	Appalachian File USR (18 CFR §5.15(f))
December 20, 2021	**Appalachian Host USR Meeting (18 CFR §5.15(f))**
December 30, 2021	**Stakeholders File Comments on DLA (18 CFR §5.16(e))**
January 4, 2022	Appalachian File USR Meeting Summary (18 CFR §5.15(f))
February 3, 2022	Stakeholders File Disagreements with USR Meeting Summary (18 CFR §5.15(f)(4)) (if necessary)
February 28, 2022	Appalachian File Final License Application (18 CFR §5.17)
March 5, 2022	Appalachian File Response to USR Meeting Summary Disagreements (18 CFR §5.15(f)(5)) (if necessary)

BOUNDLESS ENERGY

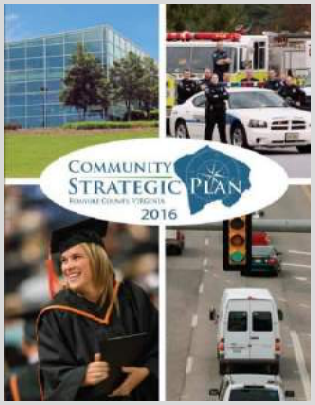


Overview

- Virginia Outdoors Plan
- Roanoke County Strategic Plan
- Explore Park Adventure Plan
- Roanoke River Greenway
- Roanoke River Blueway
- Recommended Recreation Improvements

ROANOKE COUNTY VA

Roanoke County Community Strategic Plan (2016)



Vision Statement

Roanoke County is a vibrant, innovative, and scenic community that values its citizens, heritage, and quality of life.

STRATEGIC INITIATIVE

Keep Roanoke County Healthy, Clean and Beautiful

Outdoor Recreation and Natural Resources

Roanoke County's abundant outdoor recreational opportunities are seen as a means to market the County's high quality of life to young professionals, an increasingly important part of the equation in attracting entrepreneurial businesses to the region. Outdoor recreation that capitalizes on increasing the number of visitors to the area while providing healthy alternatives for citizens is a high priority. Roanoke County will continue to expand and promote the County's outdoor recreational advantages, especially amenities such as Explore Park, greenways, and blueways.

Environmental Stewardship

Environmental stewardship and protecting natural resources is important to keeping Roanoke County healthy, clean and beautiful. The scenic beauty of the Blue Ridge Mountains, along with the regional streams and rivers of the region, are what set Roanoke County apart from other communities. The County will continue to preserve and improve these irreplaceable features that are so vital to ensuring an attractive and healthy community for future generations.

Public input from Quality of Life, Transportation, Community Health and Well-Being, Education and Economic Development focus groups was used to develop KEEP ROANOKE COUNTY HEALTHY, CLEAN AND BEAUTIFUL.

ROANOKE COUNTY VA

Niagara Dam Hydroelectric Project Relicensing (FERC No. 2466-034)

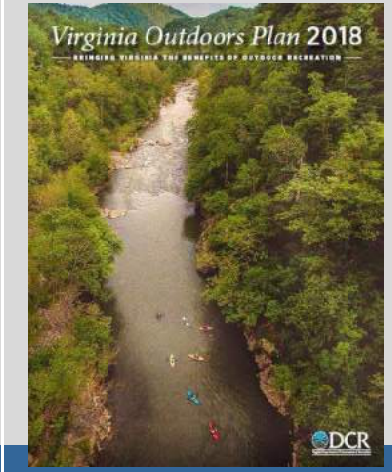
Recreation Stakeholder Meeting

April 20, 2021

EXPLORE PARK

ROANOKE COUNTY VA

Virginia Outdoors Plan 2018



Regional Focus

Table 5.1 Most-Needed Outdoor Recreation Opportunities

Roanoke Valley-Alleghany Recreational Planning Region

activity	region	state
	% of households in	
Natural areas	58	54
Trails	49	45
Water access	45	43
Parks	40	49
Historic areas	37	39
Scenic drives (driving for pleasure)	31	29
Playing fields, sports and golf facilities	17	22

Source: 2017 Virginia Outdoors Demand Survey.

2018 Virginia Outdoors Plan

Regional Featured Projects

To be considered a regional featured project, a project must meet at least one of the following criteria:

- Has statewide or regional significance.
- Addresses top statewide or regional needs identified by the Virginia Outdoors Demand Survey.
- Has involvement and support from multiple jurisdictions in the region.
- Able to be initiated within the next five years.

Featured projects for the Roanoke Valley-Alleghany region:

- Promote and implement the James River Heritage Trail including the Upper James River Water Trail and the Alleghany Highlands Blueways.
- Implement the Roanoke River Greenway and Blueway Plan.
- Implement the Tinker Creek, Glade Creek and Daleville Creek Greenways.
- Implement the Alleghany Highlands Trails system.
- Implement the Appalachian Trail Priority Landscape at Catawba Valley and McAfee Knob.
- Promote and implement the 2016 Explore Park Adventure Plan.
- Promote Virginia's Blue Ridge Ride Center, an International Mountain Biking Association Silver-Level Ride Center.
- Design and implement in-river kayak parks.
- Develop the Arcadia Initiative as a multijurisdictional effort to preserve large landscapes for the protection of wildlife migration and forest ecology.

Brief History of Explore Park

- Originally opened in 1994 by the Virginia Recreational Facilities Authority (VRFA) as a living history museum
- Closed in 2007 due to recession and declining State funds
- 99-year lease executed between Roanoke County and VRFA in 2013
- Roanoke County reopened the park in 2014
- Explore Park Adventure Plan adopted by the Roanoke County Board of Supervisors in 2016

EXPLORE PARK

ROANOKE COUNTY VA

Roanoke County Community Strategic Plan Annual Reports

STRATEGIC INITIATIVE

POSITION ROANOKE COUNTY FOR ECONOMIC GROWTH

Maintaining and Improving Outdoor Spaces

Explore Park held two river clean-ups last year with more than 170 volunteers and staff removing over five tons of garbage from the along the park's waterways.

Explore Park also partnered with the **Pathfinders for Greenways** to repair over 10 miles of equestrian trails from Explore Park to Mill Mountain. This project is another example of partnering to increase the outdoor experience for a variety of recreation users across the Roanoke Valley.

Above: River cleanup at Explore Park removed 10,000 pounds of trash from along the park's waterways.

Explore Park Succeeds as a Center for Outdoor Recreation

Explore Park Adventure Plan Development

STRATEGIC INITIATIVE

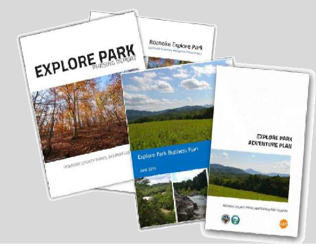
KEEP ROANOKE COUNTY HEALTHY, CLEAN AND BEAUTIFUL

Explore Park Becomes Home to Outdoor Fun for the Entire Family

Tubing, Camping, and Cabin Rentals Return for 2020 Summer Season

Twin Creeks Opens at Explore Park

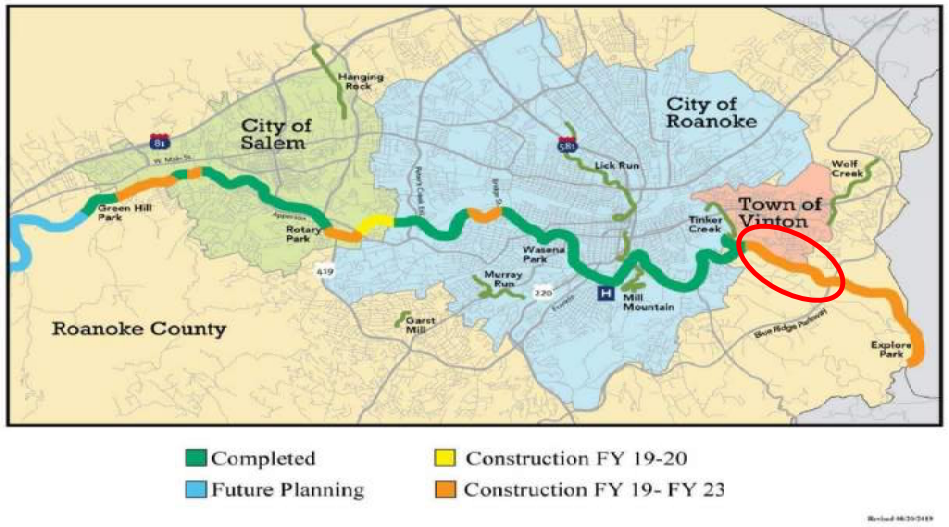
Explore Park Adventure Plan
Fulfilling the Community's Vision



Key Amenities:

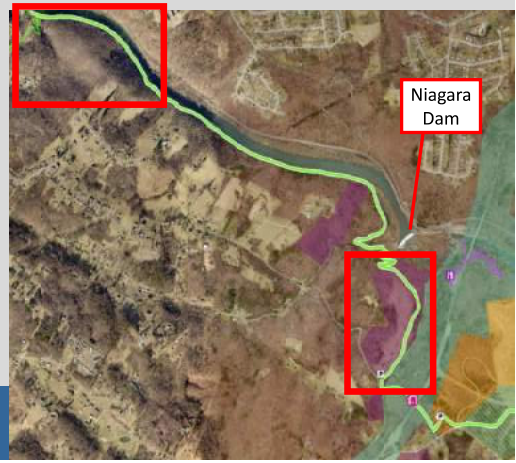
- In-River Kayak Park
- Roanoke River Greenway
- River Access/Blueway Improvements
- Bike Skills Park
- Disc Golf Course
- Aerial Park/Zipline
- Overnight Accommodations
- Food/Retail Operations

Roanoke River Greenway Status Map



East Roanoke River Greenway (UPC 91191)
Roanoke City to Highland Road

- Design/Engineering Plans are Complete
- Project Impacts proposed within Niagara Dam Hydroelectric Project Boundary and Appalachian Power Company owned land
- Phasing Construction:
  - Reducing scope on western and eastern termini due to right-of-way acquisition issues with private land owners
  - Construction anticipated 2021-2022
- Roanoke County will continue negotiating with property owners along Roanoke River



Explore Park
Recreational Use of Roanoke River

<u>2019 Tubing & Kayak Rentals</u>
Number of Bookings: 231
Customer Count: 722

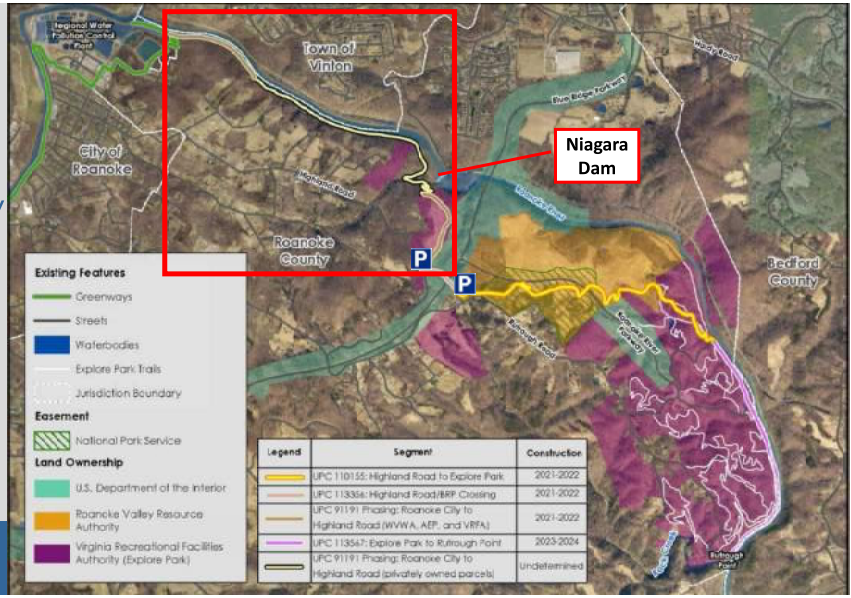
<u>2020 Tubing & Kayak Rentals</u>
Number of Bookings: 621
Customer Count: 1,925

<u>Rutrough Point Vehicle Counts</u>
2019 14,166
2020 17,866

BLUE MTN ADVENTURES.com

East Roanoke River Greenway Overview Map

Roanoke City to Explore Park



Roanoke River Blueway

- Virginia Treasures Designation (2016)
- Governor's Environmental Excellence Award (2016)
- USA Today Reader's Choice 2021: Third "Best Urban Kayaking Spot"
- DCR Scenic Rivers – Roanoke River Qualified Designation (upstream of Blue Ridge Parkway)

Questions or Comments?

Thank you for the opportunity to provide input!

Lindsay B. Webb, MPA
Parks Planning and Development Manager
1206 Kessler Mill Road | Salem, VA 24153
(540) 777-6328 | (540) 521-9907 (cell)

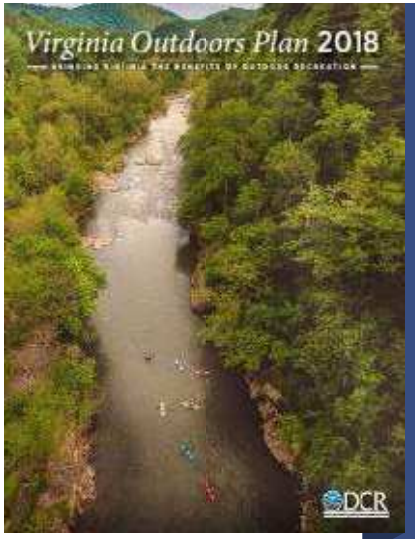
Potential Property Acquisition

Partnership Opportunity for Public Access to Roanoke River, located upstream of Niagara Dam

Grant applications have been submitted to DCR and VOF

Summary of Recreation Requests

- **Support Implementation of the Explore Park Adventure Plan**
  - Recreation Flow Controlled Releases (i.e., summer and fall)
  - In-River Kayak Park proposed downstream of the Niagara Dam
- **Support Roanoke River Greenway**
  - Right of Way, Environmental, and FERC approvals needed
- **Support Roanoke River Blueway**
  - River-Left: improvements needed to existing portage put-in needed (i.e., floating dock) and portage take-out (i.e., with ramp or stairs) of the Niagara Dam
  - River-Right: Potential property acquisition could provide for development of a new public access facility with vehicular parking adjacent to the Niagara Dam
- **Support Trash and Debris Clean-Up Efforts**



Filling a Regional Need

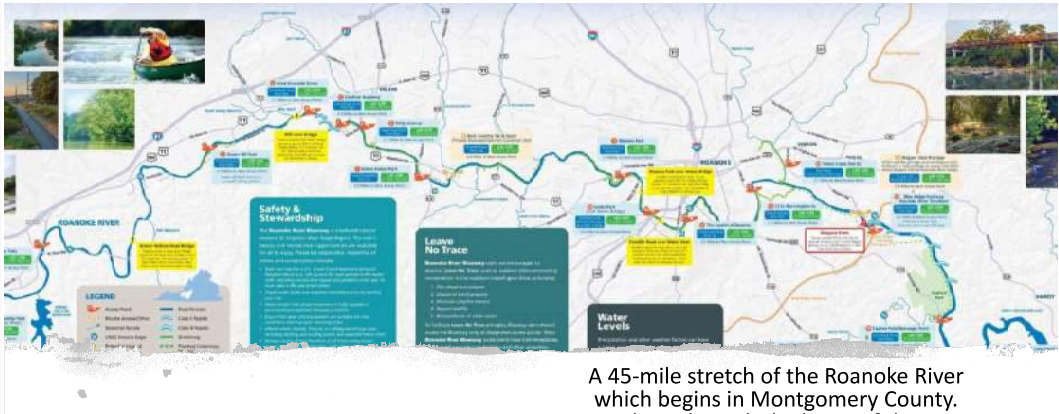
- In the Roanoke Region water access was ranked as the third greatest need for recreation resources
- Virginia Tourism Corporation 2014 Virginia Mountain Region Travel Profile for Roanoke shows a strong interest in nature-based tourism and recreational tourism offerings.
- Outdoor recreation supports health and wellness, economic development, and conservation goals.

Roanoke River BLUEWAY

April 20, 2021

Presentation to AEP and Consultants for the Recreation Stakeholder Meeting

Niagara Dam Relicensing: Project 2466-034



What is the Roanoke River Blueway?

A 45-mile stretch of the Roanoke River which begins in Montgomery County. Stretching through the heart of the Cities of Salem and Roanoke before continuing on to the scenic Roanoke River Gorge in Roanoke County, the Roanoke River Blueway is a unique outdoor recreation opportunity in Virginia's Blue Ridge Mountains.

Blueways as Economic Development

- USA Today's 3rd Best Urban Kayaking Spot!
- Outdoor Recreation key draw for tourism in our region
- Promoting blueways supports outfitters and other local businesses
- Blueway connection to greenway a unique asset

Access Points

Roanoke River:

- East Montgomery County
- Wayside Park
- Green Hill Park
- West Riverside Drive
- Cardinal Justice Academy
- Eddy Avenue
- Salem Rotary Park
- Wasena Park
- Smith Park Low Water Bridge
- Launch at Reserve
- 13th/Bennington
- Tinker Creek
- Blue Ridge Parkway – Roanoke River Overlook
- Explore Park – Journey's End*
- Explore Park – Rutrough Point
- Hardy Road

Tributary Access:

- Jae Valley Park
- Mason Creek

Program Achievements

- Governor's Award for Environmental Excellence for Implementing the Virginia Outdoors Plan
- Virginia Treasures Designation for all access points
- Virginia Tourism Corporation Grant to leverage funding for promotion efforts
- ACA Designated Water Trail

Usage Numbers

Roanoke Mountain Adventures

- Tube Rentals Trips: 1482 = $21,794.00
- Kayak Rental Trips: 534 = $16,577.00
- Paddleboard Rental Trips: 126 = $7,550.00
- Shuttles: 373 =$6965.00
- Total water rentals: $45,721.00

Blue Ridge Parkway/Fisherman's Trail Counter

Tinker Creek

- Improvements funded in part by AEP, DWR, and the Town of Vinton
- Managed and operated by the Town of Vinton
- Last takeout before the dam
- Signage improvements in progress here and other sites

RoanokeRiverBlueway.org

Explore Park – Journey's End and Rutrough Point

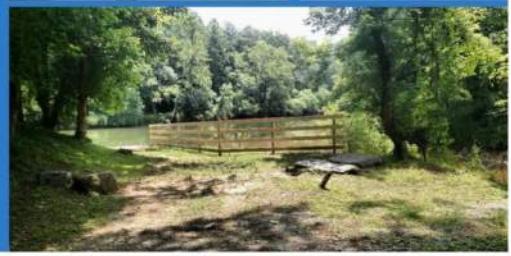
Journey's End

- Popular for tubing
- Needs to be incorporated into our mapping/website

Rutrough Point

- Last takeout in Explore Park
- Confluence of Back Creek (Jae Valley Park)
- Popular paddleboarding location

RoanokeRiverBlueway.org



13th/Bennington

- Connected directly to the Roanoke River Greenway
- Funding allocated by the Blueway Committee for improvements at this location
- 13th Street/Bennington parking lot provides connection to Tinker Creek Greenway (Underhill counting site)
- Last takeout on the Roanoke River above the dam

RoanokeRiverBlueway.org

Blue Ridge Parkway, Roanoke River Overlook

- Rehabilitation in 2015 by FORVA and Pathfinders for Greenways
- Ribbon cutting held February 2016
- Put in below the dam – best views of the dam

RoanokeRiverBlueway.org

Impacts of the Niagara Dam

- The **portage**!

For more information please contact Amanda McGee at amcgee@rvarc.org or visit

RoanokeRiverBlueway.org

Roanoke River BLUEWAY

Takeaways

The Blueway Committee supports:

- Improvements to the Portage
- Study Access Above the Dam
- Include Greenway Users Amongst Recreation Stakeholders
- Access to the Bypass Reach/Recreational Releases

Subject: FW: AEP Niagara Hydroelectric Project - Recreation Stakeholder Mtg Summary and Online Survey Link

From: Yayac, Maggie
Sent: Thursday, June 17, 2021 4:11 PM
To: Kulpa, Sarah <sarah.kulpa@hdrinc.com>; Rhur, Roberta <robbie.rhur@dcr.virginia.gov>; Pete Eshelman <Pete@roanoke.org>
Cc: rcaywood@roanokecountyva.gov; Lindsay Webb <LWEBB@roanokecountyva.gov>; Anita McMillan <amcmillan@vintonva.gov>; riverdancer1943@gmail.com; Amanda McGee <amcgee@rvarc.org>; Liz Belcher <LBELCHER@roanokecountyva.gov>; Doug Blount <DBLOUNT@roanokecountyva.gov>; dawn_leonard@nps.gov; Elizabeth B Parcell <ebparcell@aep.com>; Jonathan M Magalski <jmmagalski@aep.com>; Frank Simms <fmsimms51@gmail.com>
Subject: RE: AEP Niagara Hydroelectric Project - Recreation Stakeholder Mtg Summary and Online Survey Link

Pete and Robbie,

To close the loop on this one, our online survey developer has:

- Removed the text field above the map
- Added a second map to show a zoomed in image of the Project Area
- Revised Recreation Location note to say “Recreation Location Visited (Please Check All that Apply)”

Thanks for your input.

Maggie Yayac
D 704.248.3666 **M** 610.299.0959

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From: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>
Sent: Tuesday, June 8, 2021 5:30 PM
To: Rhur, Roberta <robbie.rhur@dcr.virginia.gov>; Pete Eshelman <Pete@roanoke.org>
Cc: rcaywood@roanokecountyva.gov; Lindsay Webb <LWEBB@roanokecountyva.gov>; Anita McMillan <amcmillan@vintonva.gov>; riverdancer1943@gmail.com; Amanda McGee <amcgee@rvarc.org>; Liz Belcher <LBELCHER@roanokecountyva.gov>; Doug Blount <DBLOUNT@roanokecountyva.gov>; dawn_leonard@nps.gov; Elizabeth B Parcell <ebparcell@aep.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>; Frank Simms <fmsimms51@gmail.com>
Subject: RE: AEP Niagara Hydroelectric Project - Recreation Stakeholder Mtg Summary and Online Survey Link

Thank you for the comments, Pete and Robbie. We’ll work with our developer to get this front matter updated and let you know where that lands.

Sarah Kulpa
D 704.248.3620 **M** 315.415.8703

hdrinc.com/follow-us

From: Rhur, Roberta <robbie.rhur@dcr.virginia.gov>
Sent: Tuesday, June 8, 2021 3:27 PM
To: Pete Eshelman <Pete@roanoke.org>
Cc: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>; rcaywood@roanokecountyva.gov; Lindsay Webb

<LWEBB@roanokecountyva.gov>; Anita McMillan <amcmillan@vintonva.gov>; riverdancer1943@gmail.com; Amanda McGee <amcgee@rvarc.org>; Liz Belcher <LBELCHER@roanokecountyva.gov>; Doug Blount <DBLOUNT@roanokecountyva.gov>; dawn_leonard@nps.gov; Elizabeth B Parcell <ebparcell@aep.com>; Jonathan M Magalski <jmmagalski@aep.com>; Yayac, Maggie <Maggie.Yayac@hdrinc.com>; Frank Simms <fmsimms51@gmail.com>
Subject: Re: AEP Niagara Hydroelectric Project - Recreation Stakeholder Mtg Summary and Online Survey Link

All:

Pete just said what I was thinking when I attempted the survey, he beat me to the comments, thanks for that :)

On Tue, Jun 8, 2021 at 2:24 PM Pete Eshelman <Pete@roanoke.org> wrote:

> Sarah,
>
> 1). If I go to the survey (https://hdrinc.co1.qualtrics.com/jfe/form/SV_868Pdv5uC5hgmgZ) the instructions on the page are not clear. For example, it says “click to write the question text”…I’m guessing no one put an actual question here as this is placeholder text from a template?
>
> 2). And you cannot zoom in on the map. Seems we would want people to be able to zoom in on the project.
>
> 3). The next section says “Recreation Location (check on):. But what are we checking? It isn’t clear as to what you want a person to do here.
>
> It does become more clear when you move onto subsequent pages of the survey.
>
> Pete
>
> Pete Eshelman
>
> Roanoke Outside Foundation,
>
> Roanoke Regional Partnership
>
> (540) 343-1550 x 104
>
> (540) 392-6989 (cell)

Subject: FW: AEP Niagara Hydroelectric Project (FERC No. 2466) -Summary of RLP larval drift study conference call
Attachments: AEP Niagara RLP Survey Call Summary_20210607 DRAFT.docx

From: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>
Sent: Wednesday, June 30, 2021 12:33 PM
To: McCloskey, John <john_mccloskey@fws.gov>; McCorkle, Richard <richard_mccorkle@fws.gov>; scott.smith@dwr.virginia.gov; ernie.aschenbach@dwr.virginia.gov; ernie.aschenbach@dwr.virginia.gov
Cc: Allyson Conner <Allyson.Conner@ferc.gov>; John Smith <John.Smith@ferc.gov>; Laurie Bauer <Laurie.Bauer@ferc.gov>; Jonathan M Magalski <jmmagalski@aep.com>; Elizabeth B Parcell <ebparcell@aep.com>
Subject: AEP Niagara Hydroelectric Project (FERC No. 2466) -Summary of RLP larval drift study conference call

Good afternoon,

A draft summary of the conference call to discuss the Roanoke Logperch larval drift study planned to be conducted in support of the relicensing of Appalachian Power Company's Niagara Hydroelectric Project (FERC No. 2466) is attached. Please send comments and any suggested edits back to me by COB Wednesday, July 14. HDR will then work with Appalachian to finalize the meeting summary for inclusion in the consultation record for the Fish Community Study.

On behalf of Appalachian, thank you for your attention to this project, and we look forward to future discussions with this group related to this resource issue.

And have a safe holiday weekend!

Sarah Kulpa
D 704.248.3620 **M** 315.415.8703

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-----Original Appointment-----
From: Allyson Conner <Allyson.Conner@ferc.gov>
Sent: Thursday, June 3, 2021 12:50 PM
To: Allyson Conner; McCloskey, John; McCorkle, Richard; Jon Magalski; Elizabeth B Parcell; Kulpa, Sarah; scott.smith@dwr.virginia.gov; ernie.aschenbach@dwr.virginia.gov; John Smith; Laurie Bauer
Subject: Niagara Project RLP larval drift study conference call
When: Monday, June 7, 2021 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Webex

Everyone was available Monday at 3pm and no schedules needed to be adjusted. Just click the link below and we should all be able to talk and/or see one another – should you choose that option 😊

-- Do not delete or change any of the following text. --

When it's time, join your Webex meeting here.

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Join by meeting number

Meeting number (access code): 199 577 8734

Meeting password: G3Npe3ATxg2

Tap to join from a mobile device (attendees only)
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Join by phone
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Global call-in numbers

Join from a video system or application
Dial 1995778734@ferc.webex.com
You can also dial 207.182.190.20 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business

Dial 1995778734.ferc@lync.webex.com

If you are a host, click here to view host information.

Need help? Go to https://help.webex.com

From: Kulpa, Sarah
Sent: Wednesday, July 14, 2021 12:21 PM
To: McCloskey, John
Cc: Jonathan M Magalski; Elizabeth B Parcell; scott.smith@dwr.virginia.gov; ernie.aschenbach@dwr.virginia.gov; McCorkle, Richard
Subject: RE: [EXTERNAL] AEP Niagara Hydroelectric Project (FERC No. 2466) -Summary of RLP larval drift study conference call

Thanks, John, for USFW's timely review and feedback. We look forward to further consultation with this group working toward the draft and final license applications for this project.

Sarah Kulpa
D 704.248.3620 **M** 315.415.8703

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From: McCloskey, John <john_mccloskey@fws.gov>
Sent: Wednesday, July 14, 2021 10:08 AM
To: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>
Cc: Jonathan M Magalski <jmmagalski@aep.com>; Elizabeth B Parcell <ebparcell@aep.com>; scott.smith@dwr.virginia.gov; ernie.aschenbach@dwr.virginia.gov; McCorkle, Richard <richard_mccorkle@fws.gov>
Subject: Re: [EXTERNAL] AEP Niagara Hydroelectric Project (FERC No. 2466) -Summary of RLP larval drift study conference call

Hi Sarah,

The U.S. Fish and Wildlife Service has reviewed the draft summary of the conference call held on June 7, 2021 to discuss the Roanoke Logperch larval drift study planned to be conducted in support of the relicensing of Appalachian Power Company's Niagara Hydroelectric Project (FERC No. 2466). We have no comments or suggested edits on the meeting summary. The meeting summary accurately reflects what was discussed on the call. We appreciate your efforts to address our concerns on this project.

John.

****

John McCloskey

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

6669 Short Lane

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

July 22, 2021

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Niagara Hydroelectric Project (FERC No. 2466-034)
Fourth Quarterly Study Progress Report – Summer 2021

Dear Secretary Bose:

Appalachian Power Company (Appalachian or Applicant), a unit of American Electric Power (AEP) is the Licensee, owner, and operator of the run-of-river 2.4 megawatt (MW) Niagara Hydroelectric Project (Project No. 2466) (Project or Niagara Project) located on the Roanoke River in Roanoke County, Virginia. The Project is currently undergoing relicensing following the Federal Energy Regulatory Commission's (FERC or Commission) Integrated Licensing Process (ILP).

This Fourth Quarterly Study Progress Report describes the activities performed since the Third Quarterly Study Progress Report which was filed on April 30, 2021, and includes activities expected to be conducted in quarter 3 (Q3) of 2021. Unless otherwise described, all relicensing studies are being conducted in conformance with the approved Revised Study Plan (RSP) and the Commission's Study Plan Determination (SPD).

Bypass Reach Flow and Aquatic Habitat Study

- Field data collection was completed during the weeks of June 28 and July 5. Once the field data has been analyzed, a two-dimensional (2D) aquatic habitat model will be developed. Preliminary modeling results, conclusions, and recommendations will be provided in the Updated Study Report (USR).

Water Quality Study

- Appalachian's consultant, HDR, reinstalled two continuous temperature and dissolved oxygen (DO) data sondes in the bypass reach (one at the upstream monitoring location and the other at the downstream monitoring location) and a continuous temperature and DO data sonde in the tailrace during the week of June 28th. HDR has completed one download

on July 8 and a second download on July 20. HDR presently plans to download measurements from the equipment approximately every other week through October 2021.

- Appalachian plans to collect discrete water quality profile data at the forebay monitoring location during equipment checks and data downloads for the continuous monitoring instrumentation.
- Additional water quality data collected during the 2021 field season will be summarized, along with any conclusions or recommendations, in the USR in Q4 2021.

Fish Community Study

- As reported in Appalachian's previous progress report, a Larval Drift Study was planned for early spring 2021 to coincide with the Roanoke Logperch (*Percina Rex*) spawning window. Data collection efforts were scheduled to start at the beginning of April 2021 and continue for 10 consecutive weeks, ending in mid-June. The study requires (prior to field data collection) a Section 10(a)(1)(A) permit from the U.S. Fish and Wildlife Service (USFWS) regional office. An application for the federal recovery permit was submitted in December 2020 by Edge Engineering & Science, LLC (EDGE) on behalf of Appalachian (Application ID: CS0003751, Permit ID:PER0002735). The timing of this application filing was discussed during the ISR, including with representatives of USFWS. The 30-day public comment period for the permit application was initiated by USFWS via public notice published in the Federal Register on April 28, 2021. The permit has not yet been issued.
- Due to this permit delay, Appalachian's subconsultant, EDGE, was unable to complete the Larval Drift Study as scheduled. On June 7, an informal conference call was held among FERC Division of Hydropower Licensing staff, staff from USFWS and the Virginia Department of Wildlife Resources (VDWR), and representatives from Appalachian and HDR, to discuss process considerations for delaying the study until the spring of 2022 (i.e., after the filing of the final license application) or alternative approaches or measures. As follow-up to this discussion, and based on findings from adult and juvenile Roanoke Logperch surveys at the Project scheduled for completion this summer, Appalachian plans to further consult with the agencies regarding the Larval Drift Study in advance of or in conjunction with the filing of the draft license application.
- Appalachian did not receive approval from the USFWS to complete the adult Roanoke Logperch electrofishing sampling efforts in the Niagara bypass channel as presented in the RSP. In lieu of and in consultation with USFWS and VDWR, Appalachian completed the spring adult Roanoke Logperch survey in the bypass channel using snorkeling methodologies. The snorkel surveys and habitat assessment efforts in the bypass channel

were completed the week of June 28. Additional field sampling for adult and young-of-year Roanoke Logperch in the vicinity of the Project as presented in the RSP will be completed between August and October 2021.

- Appalachian will initiate the Turbine Blade Strike Evaluation for Niagara using the most recent version of the USFWS Turbine Blade Strike Analysis Model[1] and will also incorporate available historical information. A tentative list of species collected at the site to be used in the analysis was presented in the ISR. The analysis and reporting will be continued to be performed in Q3 2021 and results will be included in the USR.

Benthic Aquatic Resources Study

- Field data collection for the macroinvertebrate and crayfish community was completed between September and October 2020. A second benthic macroinvertebrate and crayfish field sampling effort was completed on June 2-4, 2021. The benthic macroinvertebrate and crayfish sampling is complete. While this sampling was initially scheduled for completion by May 31, prior to the end of the spring macroinvertebrate index period (May 31) as defined by VDEQ 2008, scheduling of the fieldwork was delayed due to the need to obtain a not likely to adversely affect determination (which was received on May 26, 2021) for the protection of Roanoke Logperch from USFWS, which extended to this sampling effort as well.
- Results of the laboratory processing, taxonomic identification, and data processing will be provided in the USR.

Recreation Study

- The Recreation Visitor Use Online Survey is on-going and will continue to be available in support of the Recreation Use Documentation survey. Appalachian provided minor updates to the online survey based on recent stakeholder feedback and included the most up to date Project map. Appalachian reshared the survey link with stakeholders in May, so that they could distribute to their users/groups. Appalachian also posted the survey link on the Claytor Lake and Smith Mountain Facebook pages, as well as the NextDoor application. (The notification was sent to 19 Appalachian serviced neighborhoods, translating to about 3,800 customers in the area of the Niagara Dam and corresponding Project area. These postings were done on June 7, 2021).

[1] U.S. Fish and Wildlife Service (USFWS). 2020. TBSA Model: A Desktop Tool for Estimating Mortality of Fish Entrained in Hydroelectric Turbines. Excel file dated December 9, 2020.

- As described in the previous progress report, driven by the then-pending closure of the Blue Ridge Parkway, Appalachian's sub-consultant, Young Energy Services (YES) was able to complete seven days of in-person survey (weekdays and weekends included) between the time period March 20 and May 11, resulting in twenty in-person surveys. The remainder of the facilities included in Recreation Use Documentation task began being surveyed by YES in May 2021, according to the schedule presented in the RSP.
    - Also as described in the previous progress report, as the alternative to in-person periodic observation of the portage from across the river, Appalachian installed a trail camera on May 26, 2021 in the vicinity of the portage put-in location to record activity during the Recreation Use Documentation timeframe. One download of the trail camera has occurred at the time of this progress report.
- Appalachian is presently evaluating recreation facility enhancements to be included in Appalachian's licensing proposal and plans to conduct additional stakeholder consultation related to potential enhancements in advance of or concurrent with the filing of the Draft License Application.

Wetlands, Riparian, and Littoral Habitat Characterization Study and Shoreline Stability Assessment

- The field work in support of the Wetlands, Riparian, and Littoral Habitat Characterization Study and the Shoreline Stability Assessment was completed during the week of June 21st and results will be provided in the USR.

Cultural Resources Study

- All field investigations for this study have been completed. Final results of the Cultural Resources Study will be filed with the USR.

If there are any questions regarding this progress report, please do not hesitate to contact me at (614) 716-2240 or via email at jmmagalski@aep.com

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation

From: Kulpa, Sarah
Sent: Tuesday, July 27, 2021 6:27 AM
To: ACHP - John Eddins; Catawba Indian Nation - Wenonah Haire; County of Roanoke - David Henderson; County of Roanoke - Lindsay Webb; County of Roanoke - Michael Clark; County of Roanoke - Richard Caywood; Delaware Nation - Eric Paden; Friends of the Blue Ridge Parkway - Audrey Pearson; Friends of the Rivers of Virginia - Bill Tanger; Harold Peterson; Kevin Colburn - American Whitewater (kevin@americanwhitewater.org); Monacan Indian Nation - Kenneth Branham; NPS - Dawn Leonard; Roanoke County Parks - Doug Blount; Roanoke Regional Partnership - Pete Eshelman; Roanoke River Blueway; Roanoke Valley Alleghany Regional Commission - Amanda McGee; Roanoke Valley Greenway - Liz Blecher; Smith Mountain Lake Assn - Lorie Smith; Town of Vinton - Anita McMillan; Town of Vinton - Bo Herndon; Town of Vinton - Kenny Sledd; Town of Vinton - Nathan McClung; Tri-County Lakes Administrative Commission - Paula Shoffner; USEPA - Matthew Lee; USFWS; USFWS - John McCloskey; USGS - Mark Bennett; VA Cooperative Fish and Wildlife Research Unit - Paul Angermeier; VADCR - Jennifer Wampler; VADCR - Natural Heritage; VADCR - Robbie Ruhr; VADEQ - Andrew Hammond; VADEQ - Anthony Cario; VADEQ - Brian McGurk; VADEQ - Matthew Link; VADEQ - Scott Kudlas; Virginia Council on Indians - Emma Williams; Virginia Department of Conservation and Recreation - Rene Hypes; Virginia Department of Game and Inland Fisheries - Scott Smith
Cc: Jonathan M Magalski; 'ebparcell@aep.com'; Salazar, Maggie; Hanson, Danielle
Subject: Niagara Hydroelectric Project (VA) -- Filing of ILP Study Progress Report
Attachments: Niagara Fourth Quarterly Progress Report_July 2021.pdf

Niagara Hydroelectric Project Stakeholders:

Appalachian Power Company (Appalachian), a unit of American Electric Power (AEP), is the licensee, owner and operator of the Niagara Hydroelectric Project (FERC No. 2466) (Project) located on the Roanoke River in Roanoke County, Virginia. The Project is operated under a license issued by the Federal Energy Regulatory Commission (FERC). The existing FERC license for the Project expires on February 29, 2024. Appalachian is pursuing a new license for the continued operation of the Project in accordance with FERC's Integrated Licensing Process (ILP).

Pursuant to the ILP, Appalachian filed the fourth ILP Study Progress Report with the Commission on Thursday, July 22. We are notifying stakeholders and distributing an electronic copy of this submittal (attached). The filing can also be viewed online at FERC's eLibrary and will be added to the Project's public relicensing website (http://www.aephydro.com/HydroPlant/Niagara) in the coming days.

Thank you for your continued interest in this Project. Should you have any questions regarding this filing, please contact Jon Magalski with AEP at (614) 716-2240 or jmmagalski@aep.com.

Thank you,

Sarah Kulpa
Project Manager

HDR
440 S. Church Street, Suite 900
Charlotte, NC 28202-2075
D 704.248.3620 **M** 315.415.8703
sarah.kulpa@hdrinc.com

hdrinc.com/follow-us

Subject: FW: Niagara Hydroelectric Project Roanoke Logperch Update
Attachments: RLP Method Update Memo_20210802.docx

From: Huddleston, Misty <Misty.Huddleston@hdrinc.com>
Sent: Monday, August 2, 2021 2:51 PM
To: Kulpa, Sarah <sarah.kulpa@hdrinc.com>
Subject: FW: Niagara Hydroelectric Project Roanoke Logperch Update

FYI

Misty Huddleston, PhD
Associate, SR. Environmental Scientist
D 704.248.3614 **M** 865.556.9153

hdrinc.com/follow-us

From: Jon Studio <jastudio@edge-es.com>
Sent: Monday, August 2, 2021 2:50 PM
To: richard_mccorkle@fws.gov; McCloskey, John <john_mccloskey@fws.gov>; Norman, Janet <janet_norman@fws.gov>; Pinder, Mike (DGIF) <mike.pinder@dwr.virginia.gov>; scott.smith@dgif.virginia.gov; Copeland, John <john.copeland@dwr.virginia.gov>; Angermeier, Paul <biota@vt.edu>
Cc: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; John Spaeth <jpspaeth@edge-es.com>
Subject: Niagara Hydroelectric Project Roanoke Logperch Update

Good afternoon,

The attached memo (on behalf of EDGE [project consultant], HDR [project manager], and AEP [project owner]) provides a complete description of an updated survey method for the Niagara Hydroelectric Project. This methodological adjustment only pertains to 2021 Roanoke Logperch adult surveys and is contingent on approval from the Project's dive coordinator. Please respond with any questions or comments you may have. We appreciate your time.

Thank you,

JON A. STUDIO
Avon, Ohio
M: 440.413.4609
edge-es.com

EDGE
ENGINEERING & SCIENCE
further insight.

Memo

Date:	Monday, August 02, 2021
Project:	Niagara Hydroelectric Project
To:	Richard McCorkle, USFWS John McCloskey, USFWS Janet Norman, USFWS Mike Pinder, VDWR Scott Smith, VDWR John Copeland, VDWR Paul Angermeier, Virginia Tech
From:	Jon Magalski, AEP Jon Studio, Edge Engineering and Science Misty Huddleston, HDR Sarah Kulpa, HDR
Subject:	Update to Summer RLP Adult Survey Methods

Appalachian Power Company (a unit of American Electric Power; AEP) is pursuing a new license from the Federal Energy Regulatory Commission (FERC) for the Niagara Dam Hydroelectric Project (Project) as their existing license (FERC No. 2466) expires in 2024. Roanoke Logperch (RLP) specific studies were developed in coordination with the U.S. Fish and Wildlife Service (USFWS) and the Virginia Department of Wildlife Resources (VDWR) during the scoping process and presented in the Revised Study Plan (RSP) and approved by FERC in the Study Plan Determination. The field sampling methodology originally consisted of spring and summer backpack electrofishing for RLP in the Bypass Reach of the Roanoke River (below Niagara Dam) and summer backpack electrofishing at seven other locations in the Project area. It was noted in the RSP that completion of spring backpack electrofishing efforts would require a waiver of the VDWR Time-of-Year Restrictions (TOYR) for RLP with concurrence from the USFWS.

AEP, through their consultants HDR Engineering, Inc. (Project manager; HDR) and Edge Engineering and Science, LLC. (Project consultant; EDGE), submitted a request to the services for a TOYR waiver to complete the required RLP spring study in the Niagara Bypass Reach. A conference call was held on Wednesday, May 5, 2021, between AEP (Project owner), HDR, EDGE, other experts, and representatives of VDWR and USFWS to discuss the TOYR waiver request. The call resulted in a recommendation to eliminate backpack electrofishing methodology for the spring Bypass Reach sampling effort during the TOYR. The agencies agreed that the use of snorkeling survey methods would pose less of a potential effect on RLP (Not Likely to Adversely Affect) while allowing the field team to collect necessary and requested baseline information for Project-specific RLP studies. The agencies concurred that the waiver of TOYR was granted with a change to snorkel survey methods and a commitment to minimize instream disturbance during the survey effort to the extent possible.

The following snorkel methods were sent to Mike Pinder (VDWR) and Dr. Paul Angermeier (Virginia Tech) and agreed upon as an acceptable substitute. These methods were used to successfully complete spring adult RLP sampling in the Bypass Reach between June 28 and 30, 2021, where 9 adult and 1 juvenile RLP were observed.

Survey Methods

The general snorkeling survey methods are based on the line-transect methods and simple Emlen model described in Ensign et al. (1995), which are specific to RLP in the Roanoke River. The Bypass Reach sample location includes line transects running parallel to flow during typical seasonal flows. Roanoke Logperch are the only target species in the snorkel survey, but other fish species observed are noted as present.

Maximum visibility is determined by moving a Secchi disc away from a snorkeler underwater until it is no longer visible. Parallel lines are laid on the stream bed (spaced a minimum distance of 1.5 times the maximum visibility) so that full coverage is achieved, and overlap is reduced. Snorkelers begin searching at the downstream end of the reach and proceed slowly upstream, with the transect line in the center of their body, performing visual searches by looking from side to side for RLP. When an RLP is observed, a weighted marker is placed where the observation initially occurred. The spotter records juvenile, adult, or male adult (orange strip in first dorsal). Areas along each transect where habitat is deemed unsuitable (based on stream velocity, depth, and substrate size) will be skipped. After one full pass of each transect, the perpendicular distance between the transect line and each marker is measured and recorded. Further, the location of each marker is recorded with a sub-meter accuracy GPS unit along with depth, velocity, silt cover, and pebble counts.

Habitat assessment methods employed in the Bypass Reach and other sites follow those outlined in the RSP. A map of documented RLP sightings is overlain by habitat suitability data to identify the areas/habitats within the Bypass Reach that are being utilized by RLP adults during the spring and summer.

Update to Summer RLP Adult Survey Methods

Through coordination with and recommendations from the USFWS and VDWR personnel, the spring field sampling plan was amended to use snorkel methods in lieu of backpack electrofishing to survey for RLP in the Niagara bypass reach. In consideration of the initial approval by species experts, and successful employment of these methods in the Bypass Reach (June 2021), AEP is planning to use the snorkel methodology to complete the summer (August – October) 2021 adult RLP surveys in lieu of backpack electrofishing methods[1]. No other deviations from the RSP are proposed at this time and the field effort will include snorkel surveys at a total of 8 sites – including the Bypass Reach. The change to the snorkel survey method is expected to improve our ability to locate adult RLP in the study boundary while minimizing stress to these federally protected fish.

Literature Cited

Ensign, W.E., P.L. Angermeier, and C.A. Dolloff. 1995. Use of line transect methods to estimate abundance of benthic stream fishes. Canadian Journal of Fisheries and Aquatic Sciences. 52: 213-222.

[1] The switch to snorkel methodology is contingent upon approval of the dive plan by AEP's dive coordinator.

From: Dustin L Zirkle
To: jastudio@edge-es.com
Cc: Huddleston, Misty; Kulpa, Sarah; Jonathan M Magalski
Subject: Snorkel Survey Plans Approval
Date: Friday, August 6, 2021 4:35:40 PM
Attachments: image001.png

All,

The review process of the submitted dive plans from Edge E&S for the snorkel surveys along the Roanoke River is complete. The plans are approved as written. If there are any deviations or changes in work scope, personnel or equipment, an amendment will need to be made to the dive plan, and reevaluated for re-approval.

REFERENCES:

- AEP Corporate Underwater Diving Policy Rev. 3
- AEP Safety & Health policies & procedures
- AEP Clearance Permit Procedure
- AEP Terms and Conditions

Thanks & Stay Safe,

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY™

DUSTIN L ZIRKLE | **DIVING PROGRAM MGR**
DLZIRKLE@AEP.COM | D:304.675.8258 | C:304.593.6137
1406 JEFFERSON BLVD, POINT PLEASANT, WV 25550-1344

From: McCloskey, John
To: Angermeier, Paul; Jon Studio; McCorkle, Richard; scott.smith@dgif.virginia.gov; John Copeland; Michael Pinder
Cc: Huddleston, Misty; John Spaeth
Subject: Re: [EXTERNAL] RE: Niagara Hydroelectric Project Roanoke Logperch Update
Date: Monday, August 9, 2021 2:35:32 PM

Jon,

The U.S. Fish and Wildlife Service supports the switch from electrofishing to snorkeling for RLP surveys of the Roanoke River associated with the relicensing of the Niagara Hydroelectric Project as this should result in less risk to RLP. However, we agree with Paul that a minimum visibility criterion for snorkeling is recommended to ensure effective snorkeling surveys. The USFWS will defer to Mike and Paul to determine the minimum visibility criterion for snorkeling surveys. If the minimum visibility criterion cannot be met, either surveys should be delayed until water clarity improves or the survey method should be switched to electrofishing.

Thanks, John.

****
John McCloskey
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
6669 Short Lane
Gloucester, VA 23061
T: (804) 824-2404
F: (804) 693-9032
Work cell (while teleworking): 757-378-8410
Visit us at http://www.fws.gov/northeast/virginiafield
****

From: Angermeier, Paul <biota@vt.edu>
Sent: Wednesday, August 4, 2021 8:39 AM
To: Jon Studio <jastudio@edge-es.com>; McCorkle, Richard <richard_mccorkle@fws.gov>; McCloskey, John <john_mccloskey@fws.gov>; Norman, Janet <janet_norman@fws.gov>; scott.smith@dgif.virginia.gov <scott.smith@dgif.virginia.gov>; John Copeland <john.copeland@dwr.virginia.gov>; Michael Pinder <Mike.Pinder@dwr.virginia.gov>
Cc: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; John Spaeth <jpspaeth@edge-es.com>
Subject: [EXTERNAL] RE: Niagara Hydroelectric Project Roanoke Logperch Update

Hi Jon
Thanks for forwarding this. I support your proposed switch to snorkeling surveys, provided water clarity holds up. Snorkeling certainly is less risky w/r/t RLP injury. And when visibility is good, the risk of false absences may be lower than for e'fishing. Back in the 1990s we often paired e'fishing and snorkeling surveys for our RLP monitoring. The main reason we adopted an e'fishing-only protocol is that water clarity sometimes limited our ability to do surveys in the designated time windows. That is, e'fishing was more reliably operable. I don't recall the exact minimum-visibility cutoff we used (it might say in Ensign et al. 1995) to ensure effective snorkeling surveys. However, if visibility is <1m, significant fright bias can occur because RLP are often skittish as snorkelers approach. This promotes underestimates of presence and abundance.
Bottom line: you need to establish a minimum-visibility criterion for snorkeling, and plan to use e'fishing if it isn't met.

Glad to discuss further as needed. Paul

From: Michael Pinder <Mike.Pinder@dwr.virginia.gov>
Sent: Monday, August 2, 2021 4:23 PM
To: Jon Studio <jastudio@edge-es.com>; richard_mccorkle@fws.gov; McCloskey, John <john_mccloskey@fws.gov>; Norman, Janet <janet_norman@fws.gov>; scott.smith@dgif.virginia.gov; John Copeland <john.copeland@dwr.virginia.gov>; Angermeier, Paul <biota@vt.edu>
Cc: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; John Spaeth <jpspaeth@edge-es.com>
Subject: RE: Niagara Hydroelectric Project Roanoke Logperch Update

Jon,

Looks acceptable to me.

Thanks,

Mike

From: Jon Studio <jastudio@edge-es.com>
Sent: Monday, August 2, 2021 2:50 PM
To: richard_mccorkle@fws.gov; McCloskey, John <john_mccloskey@fws.gov>; Norman, Janet <janet_norman@fws.gov>; Pinder, Mike (DGIF) <mike.pinder@dwr.virginia.gov>; scott.smith@dgif.virginia.gov; Copeland, John <john.copeland@dwr.virginia.gov>; Angermeier, Paul <biota@vt.edu>
Cc: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; John Spaeth <jpspaeth@edge-es.com>
Subject: Niagara Hydroelectric Project Roanoke Logperch Update

Good afternoon,

The attached memo (on behalf of EDGE [project consultant], HDR [project manager], and AEP [project owner]) provides a complete description of an updated survey method for the Niagara Hydroelectric Project. This methodological adjustment only pertains to 2021 Roanoke Logperch adult surveys and is contingent on approval from the Project's dive coordinator. Please respond with any questions or comments you may have. We appreciate your time.

Thank you,

JON A. STUDIO
Avon, Ohio
M: 440.413.4609
edge-es.com

From:	Smith, Scott
To:	McCloskey, John
Cc:	Angermeier, Paul; Jon Studio; McCorkle, Richard; scott.smith@dgif.virginia.gov; John Copeland; Michael Pinder; Huddleston, Misty; John Spaeth
Subject:	Re: [EXTERNAL] RE: Niagara Hydroelectric Project Roanoke Logperch Update
Date:	Monday, August 9, 2021 4:07:23 PM

Jon,

VDWR concurs with the recommendations put forth by USFWS.

Scott

On Mon, Aug 9, 2021 at 2:35 PM McCloskey, John <john_mccloskey@fws.gov> wrote:

> Jon,
>
> The U.S. Fish and Wildlife Service supports the switch from electrofishing to snorkeling for RLP surveys of the Roanoke River associated with the relicensing of the Niagara Hydroelectric Project as this should result in less risk to RLP. However, we agree with Paul that a minimum visibility criterion for snorkeling is recommended to ensure effective snorkeling surveys. The USFWS will defer to Mike and Paul to determine the minimum visibility criterion for snorkeling surveys. If the minimum visibility criterion cannot be met, either surveys should be delayed until water clarity improves or the survey method should be switched to electrofishing.
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> Thanks, John.
>
> **********
> John McCloskey
> Fish and Wildlife Biologist
> U.S. Fish and Wildlife Service
> 6669 Short Lane
> Gloucester, VA 23061
> T: (804) 824-2404
> F: (804) 693-9032
> Work cell (while teleworking): 757-378-8410
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Cc: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; John Spaeth <jpspaeth@edge-es.com>
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Cc: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; John Spaeth <jpspaeth@edge-es.com>
Subject: RE: Niagara Hydroelectric Project Roanoke Logperch Update

Jon,

Looks acceptable to me.

Thanks,

Mike

From: Jon Studio <jastudio@edge-es.com>
Sent: Monday, August 2, 2021 2:50 PM
To: richard_mccorkle@fws.gov; McCloskey, John <john_mccloskey@fws.gov>; Norman, Janet <janet_norman@fws.gov>; Pinder, Mike (DGIF) <mike.pinder@dwr.virginia.gov>; scott.smith@dgif.virginia.gov; Copeland, John <john.copeland@dwr.virginia.gov>; Angermeier, Paul <biota@vt.edu>
Cc: Huddleston, Misty <Misty.Huddleston@hdrinc.com>; John Spaeth <jpspaeth@edge-es.com>
Subject: Niagara Hydroelectric Project Roanoke Logperch Update

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Thank you,

JON A. STUDIO

Avon, Ohio

M: 440.413.4609

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--

Scott M. Smith

Regional Fisheries Manager

P **434**.525.7522 / **M** **434**.907.2793

Virginia Department of Wildlife Resources

CONSERVE. CONNECT. PROTECT.

A **1132 Thomas Jefferson Rd., Forest, VA 24551**

www.VirginiaWildlife.gov

APPALACHIAN POWER
An AEP Company
BOUNDLESS ENERGY

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

September 8, 2021

To: Attached Section 106 Consultation Distribution List

Subject: **Niagara Hydroelectric Project (FERC No. 2466)**
Cultural Resource Study Report
Consultation Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended

Dear Consulting Parties:

This letter represents consultation with the Virginia State Historic Preservation Officer (SHPO) and federally recognized Indian tribes (collectively "Consulting Parties") regarding the enclosed cultural resource study report. The report has been prepared in support of the ongoing Federal Energy Regulatory Commission (FERC or Commission) relicensing of the Niagara Hydroelectric Project (FERC No. 2466) located in Roanoke County, Virginia.

Appalachian Power Company (Appalachian or Applicant), a unit of American Electric Power (AEP), is the Licensee, owner, and operator of the run-of-river 2.4-megawatt (MW) Niagara Hydroelectric Project (Project No. 2466) (Project or Niagara Project), located on the Roanoke River in Roanoke County, Virginia. The Project is located about at approximate river mile 355 on the Roanoke River, approximately 6 miles southeast of the City of Roanoke. The reservoir formed by the Project is approximately 2 miles long and includes the confluence with Tinker Creek.

The existing license for the Project was issued by the Federal Energy Regulatory Commission (FERC or Commission) for a 30-year term, with an effective date of April 4, 1994, and expires February 29, 2024. Accordingly, Appalachian is pursuing a new license for the Project pursuant to the Commission's Integrated Licensing Process (ILP), as described at 18 Code of Federal Regulations (CFR) Part 5. Section 106 of the National Historic Preservation Act (Section 106) requires the Commission to take into account the effects of issuing a new license for the continued operation of the Project on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment[1]. This consultation, including the enclosed cultural resources study report, represents part of Appalachian's ongoing Section 106 consultation efforts for the Project.

[1] 54 United States Code § 306108
[2] 36 C.F.R. Part 800

BACKGROUND

Pursuant to the regulations implementing Section 106[2], the Commission has determined that issuing a new license for the Niagara Project is considered an undertaking with the potential to effect historic properties listed in or eligible for inclusion in the National Register of Historic Places.

Appalachian filed a Pre-Application Document (PAD) and associated Notice of Intent (NOI) with the Commission on January 28, 2019, to initiate the ILP. The Commission issued Scoping Document 1 (SD1) for the Project on March 26, 2019. SD1 was intended to advise resource agencies, Indian tribes, non-governmental organizations, and other stakeholders as to the proposed scope of FERC's Environmental Assessment (EA) for the Project and to seek additional information pertinent to the Commission's analysis.

On April 24 and 25, 2019, the Commission held public scoping meetings in Vinton, Virginia. During these meetings, FERC staff presented information regarding the ILP and details regarding the study scoping process and how to request a relicensing study, including the Commission's study criteria. In addition, FERC staff solicited comments regarding the scope of issues and analyses for the EA. Pursuant to 18 CFR §5.8(d), a public site visit of the Project was conducted on April 24, 2019.

Concurrent with the January 28, 2019, PAD and NOI required by the ILP, Appalachian requested designation as the Commission's non-federal representative for carrying out informal consultation pursuant to Section 106. The Commission granted Appalachian's request by notice dated March 26, 2019. While Appalachian is authorized to consult in an informal capacity, the Commission remains legally responsible for all agency findings and determinations under Section 106.

On November 6, 2019, Appalachian filed a Revised Study Plan (RSP) with the Commission describing the studies that the Licensee is proposing to conduct in support of relicensing the Project, including a Cultural Resources Study. As described in the RSP, Appalachian preliminarily proposed to define the Study Area/APE to include lands within the FERC-approved Project boundary. It also includes any lands outside of the Project Boundary where cultural resources may be affected by Project-related activities that are conducted in accordance with the FERC license.

On September 1, 2020, Appalachian submitted a letter to the Virginia SHPO, federally recognized Indian Tribes, the Advisory Council on Historic Preservation (ACHP), and other interested parties requesting concurrence on the definition of the APE and to ascertain whether properties of cultural significance (e.g., Traditional Cultural Properties [TCPs]) might exist within the APE. If no response was received from Indian Tribes, follow-up emails were sent in September and October 2021. Responses were received from the Virginia Department of Historic Resources (Virginia SHPO), Catawba Indian Nation, Delaware Nation, Monacan Indian Nation, and Pamunkey Indian Tribe. There was no response from the National Park Service, Bureau of Indian Affairs, Cherokee Nation, Eastern Band of Cherokee Indians, or the Archaeological Society of Virginia. As a result of the consultation, no TCPs were indicated as being within the APE.

ARCHAEOLOGICAL AND GEOMORPHOLOGICAL INVESTIGATIONS

Archaeological fieldwork was conducted on October 13 and 14, 2020, by Terracon Consultants, Inc. Five different areas within the Project boundary considered to have the highest potential for containing archaeological resources were examined, including the area containing previously recorded site 44RN170, a presumed rockshelter. In addition to the archaeological investigations, geomorphological investigations were conducted by Seramur & Associates from April 20–22, 2020. Fifteen hand auger borings were placed in various locations along the Roanoke River and Tinker Creek. The sediment encountered above the water table in the 15 borings was interpreted as historic alluvium with no potential to contain intact buried prehistoric cultural deposits, including site 44RN170. Based on these results, Terracon recommended the Project would have no effect on historic properties and that no additional cultural resource investigations are warranted for the proposed undertaking.

ARCHITECTURAL SURVEY

There are four previously recorded aboveground historic-age resources within the Project boundary—the Niagara Powerhouse Station and Dam (080-0095); the Blue Ridge Parkway Historic District (080-5161); the Blue Ridge Parkway Bridge (080-5161-0444); and the Virginian Railroad (128-6160). The Blue Ridge Parkway and Blue Ridge Parkway Bridge are eligible for inclusion in the NRHP, the Virginian Railroad is potentially eligible, and the Niagara Powerhouse and Dam were determined to be ineligible. None of these resources are currently being affected by Project operations.

REQUEST FOR CONCURRENCE

At this time, Appalachian is seeking concurrence from the Consulting Parties on the recommendations contained in the enclosed cultural resources study report. Appalachian respectfully requests that the consulting parties provide written concurrence within 30 days of the date of this letter (e.g., on or before October 8, 2021). If there are any questions regarding the enclosed study or the relicensing process, please do not hesitate to contact me at me at (614) 716-2240 or by email jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation

Attachment: Niagara Hydroelectric Project Section 106 Consultation Distribution List

Niagara Hydroelectric Project (FERC No. 2466)
Consulting Party Distribution List

Federal Agencies

Ms. Kimberly Bose
Secretary
Federal Energy Regulatory Commission
888 1st St NE
Washington, DC 20426

State Agencies

Ms. Julie Langan
State Historic Preservation Officer
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Tribes

Wenonah Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Rd.
Rock Hill, SC 29730

Erin Paden
Director of Historic Preservation
Delaware Nation
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Anadarko, OK 73005

Kenneth Branham
Chief
Monacan Indian Nation
P.O. Box 960
Amherst, VA 24521

Terry Clouthier
Cultural Resources Director
Pamunkey Indian Tribe
1054 Pocahontas Trail
King William, VA 23086

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

Via Electronic Filing

October 1, 2021

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Niagara Hydroelectric Project (FERC No. 2466-034)
Filing of Draft License Application

Dear Secretary Bose:

Appalachian Power Company (Appalachian or Licensee), a unit of American Electric Power (AEP), is the Licensee, owner, and operator of the run-of-river, 2.4-megawatt Niagara Hydroelectric Project (Project) (Project No. 2466), located on the Roanoke River in Roanoke County, Virginia.

The Project is currently licensed by the Federal Energy Regulatory Commission (FERC or Commission). The Project underwent relicensing in the early 1990s, and the current operating license for the Project expires on February 29, 2024. Accordingly, Appalachian is pursuing a subsequent license for the Project pursuant to the Commission's Integrated Licensing Process (ILP), as described at 18 Code of Federal Regulations (CFR) Part 5. In accordance with 18 CFR § 5.16(a), Appalachian is hereby filing the Draft License Application (DLA) for the Project.

As described in the DLA, Appalachian is proposing to continue the run-of-river operation of the Project and does not propose the development of any new hydroelectric facilities or increased generation capacity. The DLA includes proposals for some preliminary protection, mitigation, and enhancement (PM&E) measures related to resources associated with the Project. The proposed PM&E measures described in the DLA reflect consideration of available information, the preliminary results of studies conducted or in-process, and issues specific to the Project. Appalachian notes that these proposals are preliminary and expects them to be refined within the Final License Application (to be filed with FERC by February 28, 2022), based on the completion of ongoing relicensing studies and study reporting, interests of Project stakeholders, and further evaluation of Project power and non-Power values.

The DLA is composed of four volumes, as described below:

Volume I of IV (Public)
Volume I contains Public information and exhibits as listed below. Final Study Reports are not included as they are still under preparation and will be filed under with the Updated Study Report (to be filed with FERC by December 6, 2021).

- Table of Contents
- Initial Statement and Additional Information Required by 18 CFR §5.18(a)
- Exhibit A – Project Description and Operation
- Exhibit E – Environmental Report
- Exhibit F – List of General Design Drawings
- Exhibit G – Project Boundary Maps
- Exhibit H – Ability to Operate

Volume II of IV (Public)
Volume II contains Appendices to Exhibit E that are Public information. Final Study Reports are not included as they are still under preparation and will be filed under with the Updated Study Report (to be filed with FERC by December 6, 2021).

- Appendix A – Exhibit E Appendices
    - Consultation

Volume III of IV (CRITICAL ENERGY/ELECTRIC INFRASTRUCTURE INFORMATION [CUI//CEII])
Volume III contains CUI/CEII materials not intended for public release, and includes the following:

- Exhibit F – General Design Drawings
- Exhibit H – Single-Line Diagram of the Transmission System

Volume IV of IV (PRIVILEGED [CUI//PRIV])

- Cultural Resources Study Report

Appalachian is filing the DLA with the Commission electronically and is distributing this letter electronically to the parties listed on the attached distribution list. All parties interested in the relicensing process may obtain a copy of the DLA electronically through FERC's eLibrary system at https://elibrary.ferc.gov/idmws/search/fercgensearch.asp under docket number P-2466-034, or on Appalachian's website at http://www.aephydro.com/HydroPlant/Niagara.

In accordance with 18 CFR § 5.16(e), interested parties may file comments regarding the DLA within 90 days of the date of this letter, by December 30, 2021. All comments must be filed with FERC electronically or via the following address:

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

If there are any questions regarding this filing, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Supervisor, Renewables
American Electric Power Services Corporation, Environmental Services

Enclosures

cc: Distribution List
Elizabeth Parcell (AEP)

Niagara Hydroelectric Project (FERC No. 2466)
Distribution List

Federal Agencies

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Advisory Council on Historic Preservation
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NOAA Fisheries Service
Greater Atlantic Regional Fisheries Office
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US Department of Agriculture
Natural Resources Conservation Service
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Mr. Matthew Lee
US Environmental Protection Agency
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Ms. Barbara Rudnick
NEPA Team Leader - Region 3
US Environmental Protection Agency
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US Fish and Wildlife Service
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Mr. Richard C. McCorkle
Fish and Wildlife Biologist, Pennsylvania Field Office
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State College, PA 16801
richard_mccorkle@fws.gov

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Hadley, MA 01035

Field Supervisor, Virginia Field Office
US Fish and Wildlife Service
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Gloucester, VA 23061

Niagara Hydroelectric Project (FERC No. 2466)
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Reston, VA 20192
mrbennet@usgs.gov

Hon. Ben Cline
US Congressman, 6th District
US House of Representatives
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Roanoke, VA 24011

Mr. Michael Reynolds
Acting Director, Headquarters
US National Park Service
1849 C Street, NW
Washington, DC 20240

Ms. Catherine Turton
Architectural Historian, Northeast Region
US National Park Service
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Philadelphia, PA 19106

Hon. Tim Kaine
US Senate
231 Russell Senate Office Building
Washington, DC 20510

Hon. Mark Warner
US Senate
703 Hart Senate Office Building
Washington, DC 20510

State Agencies

Blue Ridge Soil and Water Conservation District
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Rocky Mount, VA 24151

Mr. Jess Jones
Freshwater Mollusk Conservation Center
Virginia Tech
1B Plantation Road
Blacksburg, VA 24061

Dr. Ralph Northam
Governor
Office of the Governor
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Mr. Paul Angermeier
Assistant Unit Leader
Virginia Cooperative Fish and Wildlife Research Unit
Department of Fisheries and Wildlife Conservation - Virginia Tech
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Sent: Monday, October 4, 2021 8:29 AM
To: ACHP - John Eddins; Catawba Indian Nation - Wenonah Haire; County of Roanoke - David Henderson; County of Roanoke - Lindsay Webb; County of Roanoke - Michael Clark; County of Roanoke - Richard Caywood; Delaware Nation - Eric Paden; Friends of the Blue Ridge Parkway - Audrey Pearson; Friends of the Rivers of Virginia - Bill Tanger; Harold Peterson; Kevin Colburn - American Whitewater (kevin@americanwhitewater.org); Monacan Indian Nation - Kenneth Branham; NPS - Dawn Leonard; Roanoke County Parks - Doug Blount; Roanoke Regional Partnership - Pete Eshelman; Roanoke River Blueway; Roanoke Valley Alleghany Regional Commission - Amanda McGee; Roanoke Valley Greenway - Liz Blecher; Smith Mtn Lake Assn - John Rupnik; Town of Vinton - Anita McMillan; Town of Vinton - Bo Herndon; Town of Vinton - Kenny Sledd; Town of Vinton - Nathan McClung; Tri-County Lakes Administrative Commission - Paula Shoffner; USEPA - Matthew Lee; USFWS; USFWS - John McCloskey; USGS - Mark Bennett; VA Cooperative Fish and Wildlife Research Unit - Paul Angermeier; VADCR - Natural Heritage; VADCR - Robbie Ruhr; VADEQ - Andrew Hammond; VADEQ - Anthony Cario; VADEQ - Brian McGurk; VADEQ - Matthew Link; VADEQ - Scott Kudlas; VADWR - Scott Smith; Virginia Council on Indians - Emma Williams; Virginia Department of Conservation and Recreation - Rene Hypes
Cc: 'ebparcell@aep.com'; Jonathan M Magalski; Hanson, Danielle
Subject: Niagara Hydroelectric Project (VA) - Filing of Draft License Application
Attachments: AEP Niagara_FERC 2466_DLA Transmittal_20211010.pdf

Niagara Hydroelectric Project Stakeholders:

Appalachian Power Company (Appalachian), a unit of American Electric Power (AEP), is the licensee, owner and operator of the Niagara Hydroelectric Project (FERC No. 2466) (Project) located on the Roanoke River in Roanoke County, Virginia. The Project is operated under a license issued by the Federal Energy Regulatory Commission (FERC). The existing FERC license for the Project expires on February 29, 2024. Appalachian is pursuing a new license for the continued operation of the Project in accordance with FERC's Integrated Licensing Process (ILP).

Pursuant to the ILP, Appalachian filed the Draft License Application (DLA) for the Project on October 1, 2021. The DLA describes measures proposed by Appalachian for the new license term. Appalachian notes that these proposals are preliminary and expects they will be refined within the Final License Application (to be filed with FERC by February 28, 2022), based on the completion of ongoing relicensing studies and study reporting, interests of Project stakeholders, and further evaluation of Project power and non-Power values.

We are notifying stakeholders of this DLA filing (see attached for transmittal letter). The public files that compose this filing can be viewed online at FERC's eLibrary (https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20211001-5246) or on the Project's public relicensing website (http://www.aephydro.com/HydroPlant/Niagara).

Interested parties may file comments regarding the DLA within 90 days of the date of the DLA filing, by **December 30, 2021**. All comments must be filed with FERC electronically or via the mailing address provided in the attached letter.

Thank you for your continued interest in this Project. Should you have any questions regarding this filing, please contact Jon Magalski with AEP at (614) 716-2240 or jmmagalski@aep.com.

Sarah Kulpa
Project Manager

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From: Kulpa, Sarah
Sent: Monday, October 4, 2021 9:01 AM
To: Frank Maguire; Laurie Bauer
Cc: Janet Scheid; ebparcell@aep.com; Jonathan M Magalski; Hanson, Danielle
Subject: RE: Updated contact information for Roanoke Valley Greenways Commission
Attachments: Niagara Hydroelectric Project (VA) - Filing of Draft License Application; contact change letter FERC-Niagara.pdf

Thanks, Frank, we will update our contact list for Niagara accordingly. Please see attached for the email distribution that just went out for the draft license application, in case this hadn't connected with you already. I've also copied Laurie Bauer at FERC here, as she is now the project coordinator for the Niagara relicensing.

Sarah Kulpa
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hdrinc.com/follow-us

From: Frank Maguire <FMAGUIRE@roanokecountyva.gov>
Sent: Monday, October 4, 2021 11:41 AM
To: ebparcell@aep.com; Jonathan M Magalski <jmmagalski@aep.com>; allyson.conner@ferc.gov; Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>
Cc: Janet Scheid <janet904@cox.net>
Subject: Updated contact information for Roanoke Valley Greenways Commission

Good morning,
Please find attached information about the change of primary contact for the Roanoke Valley Greenway Commission. I look forward to working with you all in the future, please add my contact information to you meeting announcements and any other information related to the relicensing of the Niagara Hydroelectric Project relicensing. If there is someone else who should receive this email, please let me know.
Thank you and I look forward to working with you in the future,
Frank

****

Frank Maguire, Greenways Coordinator

Roanoke Valley Greenways Commission

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American Electric Power
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November 2, 2021

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Niagara Hydroelectric Project (FERC No. 2466-034)
Fifth Quarterly (Final) Study Progress Report – Fall 2021

Dear Secretary Bose:

Appalachian Power Company (Appalachian or Applicant), a unit of American Electric Power (AEP) is the Licensee, owner, and operator of the run-of-river 2.4 megawatt (MW) Niagara Hydroelectric Project (Project No. 2466) (Project or Niagara Project) located on the Roanoke River in Roanoke County, Virginia. The Project is currently undergoing relicensing following the Federal Energy Regulatory Commission's (FERC or Commission) Integrated Licensing Process (ILP).

This Fifth Quarterly Study Progress Report describes the activities performed since the Fourth Quarterly Study Progress Report which was filed on July 22, 2021 and includes the final study plan activities expected to be conducted in quarter 4 (Q4) of 2021. Unless otherwise described, all relicensing studies are being conducted in conformance with the approved Revised Study Plan (RSP) and the Commission's Study Plan Determination (SPD).

Bypass Reach Flow and Aquatic Habitat Study

- As previously reported, field data collection was completed during the weeks of June 28 and July 5, 2021. The two-dimensional (2D) aquatic habitat model has been developed and preliminary modeling results, conclusions, and recommendations will be provided in the Updated Study Report (USR).
- As described in the RSP, Habitat Suitability Indices (HSI) for various target life stages of Roanoke Logperch (*Percina re*x) were to be developed to support habitat modeling for this species. Data presented in Rosenberger and Angermeier (2003), Anderson (2016), and data collected during the Roanoke Logperch-targeted snorkel survey of the bypass reach (completed by EDGE in summer 2021) will be used to inform development of HSI for Roanoke Logperch.

Water Quality Study

- As previously reported, Appalachian's consultant, HDR, reinstalled two continuous temperature and dissolved oxygen (DO) data sondes in the bypass reach (one at the upstream monitoring location and the other at the downstream monitoring location) and a continuous temperature and DO data sonde in the tailrace during the week of June 28th. Data downloads and collection of discrete water quality profile data at the forebay monitoring location were completed by HDR on the following dates during the 2021 study season: July 7, 20; August 3, 12, 24; September 15; and October 6, and were removed on October 27.
- During the hottest portion of the 2021 summer (July/August) when bypass flows were at the 8 cfs minimum required release, significant biofouling affected the data sonde located at the upper bypass reach monitoring location. This resulted in two data gap periods at this location: the first was from July 13 – July 20 and the second was from July 24 – August 3. The upper bypass reach monitoring location was located in a slow moving/stagnant pool which likely contributed to the equipment biofouling. The data sonde located at the lower bypass reach monitoring location (faster moving run/riffle) was not impacted by biofouling and continuously recorded temperature and DO throughout the 2021 water quality monitoring period.
- This additional water quality data collected during the 2021 field season will be summarized, along with any conclusions or recommendations, in the USR.

Fish Community Study

- As reported previously, an application for the federal recovery permit was submitted by Edge Engineering & Science, LLC (EDGE) on behalf of Appalachian (Application ID: CS0003751, Permit ID: PER0002735) in December 2020. This permit was required to conduct the Larval Drift Study, which was previously scheduled to be completed in the spring of 2021 but was rescheduled for spring of 2022 due to delays in acquiring the federal recovery permit. The approved Section 10(a)(1)(A) permit (ID: PER0002735) was received from the U.S. Fish and Wildlife Service (USFWS) regional office in July 2021; the permit is valid from July 28, 2021 through July 28, 2026.
- As previously reported, Appalachian did not receive approval from the USFWS to complete the adult Roanoke Logperch electrofishing sampling efforts in the Niagara bypass channel as presented in the RSP. In lieu of the approval and in consultation with USFWS and VDWR, Appalachian completed the spring adult Roanoke Logperch survey in the bypass channel using snorkeling methodologies. The snorkel surveys and habitat

assessment efforts in the bypass channel were completed June 28-30, 2021, with 9 adults and 1 juvenile documented in the surveyed reach during this period.

- Additional late summer/fall field sampling for adult and young-of-year Roanoke Logperch in the vicinity of the Project, as presented in the RSP, was performed in the bypass reach August 9 - 10, 2021, before field sampling was halted due to inclement weather and high flow conditions. Thirteen Roanoke Logperch adults and 3 juveniles were documented in the bypass reach during the August 2021 field effort. The remaining fall sampling effort was completed between October 19 - 23, 2021, with a total of 15 Roanoke Logperch being observed in the mainstem Roanoke River above Niagara Dam, 6 documented downstream of Niagara Dam, and 6 were observed in Tinker Creek. Additional details will be provided in the USR.
- An evaluation of fish passage and turbine blade strike mortality for Niagara was completed in October 2021 using the current version of the USFWS Turbine Blade Strike Analysis Model. The results will be summarized in the USR.

Benthic Aquatic Resources Study

- As previously reported, collection of field data for the macroinvertebrate and crayfish community study was completed as of June 2021. Laboratory processing and taxonomic identification was completed over the summer. Results will be provided in the USR.

Recreation Study

- The Recreation Visitor Use Online Survey has been on-going and open for public comment since early 2020. In conclusion of the Recreation Study the final date for access to the online survey was on October 31, 2021. 2020-2021 survey results will be provided in the USR.
- As described in previous progress reports, driven by the then-pending closure of the Blue Ridge Parkway, Appalachian's sub-consultant, Young Energy Services (YES) was able to complete seven days of in-person survey (weekdays and weekends included) between the time period March 20 and May 11, resulting in twenty in-person surveys. YES completed the remainder of the facilities included in Recreation Use Documentation task between May and October, according to the schedule presented in the RSP. During this period, twelve survey days were completed, resulting in 46 in-person surveys. Of these 46 in-person surveys, 7 occurred at Tinker Creek Canoe Launch, 19 at the Roanoke River Trail, and 20 at Rutrough Point.
    - Also as described previously, as the alternative to in-person periodic observation of the portage from across the river, Appalachian installed a trail camera on May 26,

2021 in the vicinity of the portage put-in location to record activity during the Recreation Use Documentation timeframe. Six downloads of the trail camera have occurred over the study period and the trail camera was removed on October 27, 2021.

- Appalachian is presently evaluating recreation facility enhancements to be included in Appalachian's licensing proposal and plans to conduct additional stakeholder consultation related to potential enhancements concurrent with the USR and/or prior to the filing of the Final License Application.

Wetlands, Riparian, and Littoral Habitat Characterization Study and Shoreline Stability Assessment

- As previously reported, the field work in support of the Wetlands, Riparian, and Littoral Habitat Characterization Study and the Shoreline Stability Assessment was completed during the week of June 21, 2021 and results will be provided in the USR.

Cultural Resources Study

- As noted in the Draft License Application, the Cultural Resources Study was completed by Terracon in 2020-2021. The final study report was distributed to SHPO and Tribes on September 8, 2021 for a 30-day review period. No reply comments have yet been received. The study report was also filed with FERC as a CUI/Privileged volume of the Draft License Application.

If there are any questions regarding this progress report, please do not hesitate to contact me at (614) 716-2240 or via email at jmmagalski@aep.com

Sincerely,

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Via Electronic Filing

December 6, 2021

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
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Subject: Niagara Hydroelectric Project (FERC No. 2466-034)
Filing of Updated Study Report and Schedule for Virtual USR Meeting

Dear Secretary Bose:

Appalachian Power Company (Appalachian or Licensee), a unit of American Electric Power (AEP), is the Licensee, owner, and operator of the run-of-river, 2.4-megawatt Niagara Hydroelectric Project (Project) (Project No. 2466), located on the Roanoke River in Roanoke County, Virginia.

The Project is currently licensed by the Federal Energy Regulatory Commission (FERC or Commission). The Project underwent relicensing in the early 1990s, and the current operating license for the Project expires on February 29, 2024. Accordingly, Appalachian is pursuing a subsequent license for the Project pursuant to the Commission's Integrated Licensing Process (ILP), as described at 18 Code of Federal Regulations (CFR) Part 5.

By way of background, Appalachian developed a Revised Study Plan (RSP) for the Project that was filed with the Commission and made available to stakeholders on November 6, 2019. On December 6, 2019 FERC issued the Study Plan Determination (SPD). On July 27, 2020, Appalachian filed an updated ILP study schedule and a request for extension of time to file the Initial Study Report (ISR) to account for Project delays resulting from the COVID-19 pandemic. These delays pushed the start of the 2020 field season into early August 2020 and resulted in some of the spring and summer 2020 field work being rescheduled for 2021. The request was approved by FERC on August 10, 2020, and the filing deadline for the ISR for the Project was extended from November 17, 2020 to January 11, 2021. FERC issued the Determination on Requests for Study Modifications on May 10, 2021.

Appalachian has conducted studies in accordance with 18 CFR §5.15, as provided in the RSP and as subsequently modified by FERC's SPD. In accordance with 18 CFR §5.15, Appalachian is hereby filing the Updated Study Report (USR) with the Commission. The USR describes the Licensee's overall progress in implementing the study plan and schedule, summarizes available data, and describes any variances from the study plan and schedule approved by the Commission. The Commission's regulations at 18 CFR §5.15(c) require Appalachian to hold a meeting with participants and FERC staff within 15 days of filing the ISR. **Accordingly, Appalachian will hold**

a USR Meeting via Webex from 9 AM to approximately 4 PM on Tuesday, December 14, 2021. An agenda for the USR Meeting is provided in Attachment 1. Participants are free to join the meeting in part based on interests or availability, but please note that the agenda is intended as an approximation and more or less time may be spent on individual studies, as needed.

Appalachian respectfully requests that the stakeholders interested in participating in the Virtual USR Meeting contact Maggie Salazar at maggie.salazar@hdrinc.com on or before close of business Friday, December 10, 2021 to obtain instructions for joining the virtual meeting.

If there are any questions regarding this filing, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

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From: Kulpa, Sarah
Sent: Wednesday, November 3, 2021 10:05 AM
To: ACHP - John Eddins; Catawba Indian Nation - Wenonah Haire; County of Roanoke - David Henderson; County of Roanoke - Lindsay Webb; County of Roanoke - Michael Clark; County of Roanoke - Richard Caywood; Delaware Nation - Eric Paden; Friends of the Blue Ridge Parkway - Audrey Pearson; Friends of the Rivers of Virginia - Bill Tanger; Harold Peterson; Kevin Colburn - American Whitewater (kevin@americanwhitewater.org); Monacan Indian Nation - Kenneth Branham; NPS - Dawn Leonard; Roanoke County Parks - Doug Blount; Roanoke Regional Partnership - Pete Eshelman; Roanoke River Blueway; Roanoke Valley Alleghany Regional Commission - Amanda McGee; Roanoke Valley Greenway - Liz Blecher; Smith Mtn Lake Assn - John Rupnik; Town of Vinton - Anita McMillan; Town of Vinton - Bo Herndon; Town of Vinton - Kenny Sledd; Town of Vinton - Nathan McClung; Tri-County Lakes Administrative Commission - Paula Shoffner; USEPA - Matthew Lee; USFWS; USFWS - John McCloskey; USGS - Mark Bennett; VA Cooperative Fish and Wildlife Research Unit - Paul Angermeier; VADCR - Natural Heritage; VADCR - Robbie Ruhr; VADEQ - Andrew Hammond; VADEQ - Anthony Cario; VADEQ - Brian McGurk; VADEQ - Matthew Link; VADEQ - Scott Kudlas; VADWR - Scott Smith; Virginia Council on Indians - Emma Williams; Virginia Department of Conservation and Recreation - Rene Hypes
Cc: Jonathan M Magalski; 'ebparcell@aep.com'; Hanson, Danielle; Salazar, Maggie
Subject: Niagara Hydroelectric Project (VA) -- Filing of ILP Study Progress Report
Attachments: Niagara Fifth Quarterly Progress Report Nov 2021.pdf

Niagara Hydroelectric Project Stakeholders:

Appalachian Power Company (Appalachian), a unit of American Electric Power (AEP), is the licensee, owner and operator of the Niagara Hydroelectric Project (FERC No. 2466) (Project) located on the Roanoke River in Roanoke County, Virginia. The Project is operated under a license issued by the Federal Energy Regulatory Commission (FERC). The existing FERC license for the Project expires on February 29, 2024. Appalachian is pursuing a new license for the continued operation of the Project in accordance with FERC's Integrated Licensing Process (ILP).

Pursuant to the ILP, Appalachian filed the fifth ILP Study Progress Report with the Commission on Tuesday, November 2. We are notifying stakeholders and distributing an electronic copy of this submittal (attached). The filing can also be viewed online at FERC's eLibrary (eLibrary | File List (ferc.gov)) and will be added to the Project's public relicensing website (http://www.aephydro.com/HydroPlant/Niagara) in the coming days.

Thank you for your continued interest in this Project. Should you have any questions regarding this filing, please contact Jon Magalski with AEP at (614) 716-2240 or jmmagalski@aep.com.

Thank you,

Sarah Kulpa
Project Manager

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Subject: FW: Niagara Hydroelectric Project (VA) -- Filing of Updated Study Report
Attachments: AEP Niagara Updated Study Report_Dec 6 2021.pdf

From: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>
Sent: Monday, December 6, 2021 4:04 PM
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Cc: Jonathan M Magalski <jmmagalski@aep.com>; 'ebparcell@aep.com' <ebparcell@aep.com>; Salazar, Maggie <Maggie.Salazar@hdrinc.com>
Subject: Niagara Hydroelectric Project (VA) -- Filing of Updated Study Report

Niagara Hydroelectric Project Stakeholders:

Appalachian Power Company (Appalachian), a unit of American Electric Power (AEP), is the licensee, owner and operator of the Niagara Hydroelectric Project (FERC No. 2466) (Project) located on the Roanoke River in Roanoke County, Virginia. The Project is operated under a license issued by the Federal Energy Regulatory Commission (FERC). The existing FERC license for the Project expires on February 29, 2024. Appalachian is pursuing a new license for the continued operation of the Project in accordance with FERC's Integrated Licensing Process (ILP). Pursuant to the ILP, Appalachian filed the Updated Study Report (USR) for the Project on December 6, 2021. The USR describes the Licensee's overall progress in implementing the study plan and schedule, summarizes study results, and describes any variances from the study plan and schedule approved by the Commission.

On behalf of Appalachian, we are notifying stakeholders of the availability of the USR. For your convenience, a copy of the cover letter filed with the USR is attached. Appalachian encourages stakeholders to view the complete filing online at FERC's eLibrary (eLibrary | File List (ferc.gov)). Appalachian will also be adding the USR to the Project's public relicensing website (http://www.aephydro.com/HydroPlant/Niagara) in the coming days.

The Commission's regulations require Appalachian to hold a meeting with participants and FERC staff within 15 days of filing the USR. **Accordingly, Appalachian will hold a virtual USR Meeting via Webex from 9 AM to approximately 4**

PM on Tuesday, December 14, 2021. Appalachian requests that the stakeholders interested in participating in the Virtual USR Meeting contact Maggie Salazar at maggie.salazar@hdrinc.com on or before close of business Friday, December 10, 2021 to obtain instructions to join the virtual meeting.

Thank you for your continued interest in this Project. Should you have any questions regarding this filing, please contact Jon Magalski with AEP at (614) 716-2240 or jmmagalski@aep.com.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Virginia Field Office
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December 14, 2021

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Re: Niagara Hydroelectric Project (FERC #2466), Review of Draft License Application, Roanoke County, VA

Dear Secretary Bose:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft License Application (Application), dated October 1, 2021, prepared by HDR on behalf of Appalachian Power Company (Appalachian, Applicant), a unit of American Electric Power, for the Niagara Hydroelectric Project (Federal Energy Regulatory Commission [FERC, Commission] No. 2466 [Project]). The Service has reviewed the Application and offers the following comments. These comments are submitted in accordance with provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA); Fish and Wildlife Coordination Act (16 U.S.C. 661-667e, 48 Stat. 401), as amended; National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended; and Federal Power Act, (16 U.S.C. §823a(c)(1)), as amended (FPA).

PROJECT DESCRIPTION

The Project is located on the Roanoke River, approximately 6 miles (mi) southeast of the City of Roanoke, in Roanoke County, VA. As presently licensed, the Project consists of: (1) a 52-foot (ft) high, 462-ft-long concrete dam, inclusive of the right non-overflow abutment (70 ft) and main overflow spillway (392 ft); (2) a 62-acre impoundment with a gross storage capacity of 425 acre-ft at the normal pool elevation of 884.4 ft; (3) an 11-ft-diameter, 500-ft-long corrugated metal pipe penstock with associated entrance and discharge structures; (4) a 1,500-ft-long bypass reach; (5) a 92-ft-long, 58-ft wide, 42-ft-high concrete powerhouse containing two generating units with a total authorized installed capacity of 2.4 megawatts; (6) a 103-ft-long auxiliary spillway with a crest elevation of 886 ft located downstream of the upstream intake; (7) transmission facilities consisting of 50-ft-long 2.4-kilovolt (kV) generator leads and a 3-phase, 2.4/12-kV, 2,500-kV ampere step-up transformer; and (8) appurtenant facilities. The Project operates in a run-of-river mode under all flow conditions, where inflow equals outflow.

FISH AND WILDLIFE RESOURCES

The Roanoke River supports a variety of warmwater game and forage fish species. Redbreast sunfish (*Lepomis auritus*) and silver redhorse (*Moxostoma anisurum*) dominated samples from the current fishery surveys, but common carp (*Cyprinus carpio*), white sucker (*Catostomus commersoni*), spotttail shiner (*Notropis hudsonius*), and golden redhorse (*Moxostoma erythrurum*) were also abundant. The federally listed endangered Roanoke logperch (*Percina rex)* (RLP) has been documented in the Roanoke River both upstream and downstream of the Project and in the bypass reach during the most recent fishery surveys. The forested area along the Roanoke River has the potential to provide summer roosting habitat for the federally listed endangered Indiana bat (*Myotis sodalis*) and federally listed threatened northern long-eared bat (*Myotis septentrionalis*).

SPECIFIC COMMENTS

Exhibit E, Environmental Report

Section E.5.5, Project Facilities and Operations, Project Operations: This section states that the Project is operated to provide minimum flows to the bypass reach of 8 cubic feet per second (cfs) (during periods of powerhouse generation) or 50 cfs (during non-generating periods). During periods of power generation, the minimum flow is only provided through the Obermeyer gate on the north side of the dam. The Service recommends that Appalachian evaluates how the flow is distributed and at what elevation the reservoir is maintained during operations for the upcoming license. It may be beneficial to raise the elevation of the reservoir so that the minimum flow is provided over the dam crest instead of only through the Obermeyer gate. This change in flow distribution could provide water quality benefits for aquatic organisms and provide more habitat for aquatic organisms in the bypass reach. The results from the Flow and Bypass Reach Aquatic Habitat Study should be helpful for determining the method and location for flow delivery into the bypass reach to provide year-round habitat for aquatic organisms.

Section E.8.3, Water Use and Quality, Protection, Mitigation, and Enhancement Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties: This section states that Appalachian plans to qualitatively evaluate the relationship between areas in the upper bypass reach where low dissolved oxygen was measured during the lowest flow period of 2021 and the occurrence of aquatic habitat. This section further states that if an adjustment to the minimum flow to the bypass reach during summer months is prudent based on the findings of the relicensing studies, Appalachian will include this proposal in the Final License Application (FLA), following additional consultation with the Virginia Department of Environmental Quality (VDEQ) and Virginia Department of Wildlife Resources (VDWR) in association with the Updated Study Report (USR). The Service supports this approach and would like to work with Appalachian to develop protection, mitigation and enhancement (PM&E) measures to ensure water quality in the bypass reach and below the Project are sufficient to support aquatic organisms, including RLP.

Section E.9.2.1.6, Fish and Aquatic Resources, Environmental Analysis, Studies in Support of the Current Relicensing, Targeted Roanoke Logperch Surveys: This section states that the targeted RLP surveys proposed for 2021 included a spring larval drift study upstream of the dam as shown in Figure E.9-3. This section refers to the incorrect figure. It should be referencing Figure E.9-4. Because of delays in obtaining the necessary permits, the larval RLP surveys could not be completed in 2021 and are scheduled to be performed in spring 2022. This section should be updated to reflect the new schedule. These surveys will determine whether operations have the potential to impact larval RLP from drifting into less suitable habitat in the impoundment and/or from entrainment. If potential impacts are

occurring, PM&E measures will need to be developed to address this impact. The results of this study will be needed to fully develop PM&E measures to protect RLP in the Roanoke River.

Section E.9.2.1.7, Fish and Aquatic Resources, Environmental Analysis, Studies in Support of the Current Relicensing, Impingement and Entrainment Assessment: This section states that based on the findings from the current relicensing study, entrainment of fish early life stages (eggs and larvae) is likely minimal given the life history characteristics of species in the vicinity of the Project. This conclusion does not consider the life history of the RLP. Larvae of almost all members of the *Percina* genus drift for long distances downstream from their spawning habitats (Buckwalter et al. 2019). Genetic analysis (Roberts et al. 2013) of RLP indicated a dispersal extent of up to 80 kilometers (km); however, median lifetime dispersal distance is 6-24 km (Roberts et al. 2016). Larval RLP spawned upstream of the Project may drift into the Project intake and through the turbines. This life history characteristic of the RLP should be considered in this conclusion. The RLP larval drift study scheduled to be completed in 2022 will determine whether larval RLP could be entrained at the Project.

This section states that burst swim speed data were compiled from the literature, however if data for a specific species or group was not directly available, it was calculated as two times the critical swim speed defined by Bell (1991). Bell (1991) does not define "critical" swim speed, but does define "cruising," "sustained," and "darting" swim speeds. This section should clarify how "critical" swim speed is defined.

Section E.9.2.2, Fish and Aquatic Resources, Environmental Analysis, Project Impacts on Aquatic Resources: This section states that the Licensee does not anticipate that operation and maintenance of the Project over the new license term will have any short- or long-term, unavoidable, adverse impacts on aquatic resources. It is premature to make this statement as the RLP larval drift study and the bypass reach study are not completed and Appalachian has not yet proposed a new minimum flow in the bypass reach. If FERC determines that operation of the Project under the new license conditions may affect RLP, FERC should request consultation with the Service pursuant to the ESA.

Section E.9.2.2.2, Fish and Aquatic Resources, Environmental Analysis, Project Impacts on Aquatic Resources, Effects of Continued Project Operation on Federally Listed Aquatic Species: This section states that preliminary 2021 RLP sampling results indicate that RLP are utilizing the available habitat in the Niagara bypass channel provided by the 8 cfs minimum flow requirement. Provide the flow information during the period when RLP were documented in the bypass reach to support this statement. If flows were higher than 8 cfs at the time that RLP were documented using the bypass reach, the above statement is misleading, as a determination has not yet been made regarding whether a minimum flow of 8 cfs is sufficient to support RLP use of the bypass channel.

Section E.9.2.2.4, Fish and Aquatic Resources, Environmental Analysis, Project Impacts on Aquatic Resources, Diadromous Fish Species: This section states that fish passage facilities are not available at downstream barriers and diadromous fish are not present at the Smith Mountain Lake Project (FERC Project No. 2210) located downstream of the Project; therefore, it is unlikely that diadromous fish are present downstream or upstream of the Project. The Service agrees with this conclusion. However, on dams below Smith Mountain Lake, there are ongoing efforts to pass American eels (*Anguilla rostrata*) and eventually pass anadromous fish (e.g., American shad [*Alosa sapidissima*]). In the event diadromous fish passage is provided to the Project during the upcoming licensing period, the Secretary of Interior, through the Service, will be reserving its authority under Section 18 of the FPA to prescribe fishways for upstream and downstream passage for diadromous fish species at the Project when it becomes warranted.

Section E.9.3, Fish and Aquatic Resources, Protection, Mitigation, and Enhancement Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties: This section states that during the new license term, activities performed under the Roanoke Logperch Plan, which Appalachian presently implements for the downstream Smith Mountain Lake Project, could potentially include enhancement projects or studies that would benefit this species at or in the vicinity of this Project. The Final Roanoke Logperch Plan developed in 2008 as part of the relicensing for the Smith Mountain Lake Project has been an important mechanism for mitigating impacts from this project. License Article 408 for this project requires the licensee to develop, fund, and complete projects annually, to facilitate the recovery of the RLP in the upper Roanoke River watershed. A similar approach could be utilized at the current Project to compensate for unavoidable impacts from Project operations. Impacts from this Project are similar to impacts from the Smith Mountain Lake Project in that this Project serves to physically and genetically isolate RLP populations in the upper Roanoke River. The Service recommends that Appalachian consider a similar approach at this Project to fund projects related to the recovery of the RLP in the upper Roanoke River watershed as a PM&E measure to compensate for unavoidable impacts.

This section states that Appalachian anticipates that potential modifications to the minimum flow to the bypass reach, particularly during low flow periods of the year, will be evaluated in consultation with relicensing participants through the USR process and may be proposed in the FLA and/or recommended by agencies. This section further states that Appalachian will update this section in the FLA to reflect the findings and recommendations of the ongoing Aquatic Resources studies. Section E.9.2.2.2 states that juvenile and adult RLP were found in the bypass reach during the spring 2021 snorkel surveys including 9 adult RLP and 1 juvenile RLP. Because of the presence of RLP in the bypass reach, the Service supports this evaluation to ensure aquatic habitat in the bypass is available during low flow periods for resident fish, including RLP. The Service would like to work with Appalachian to develop PM&E measures to ensure sufficient flows are provided in the bypass reach to support the full assemblage of native fish through the entire year, including the RLP.

While there are currently no diadromous fish species above the Project, resident fish will still move within the river either seasonally for spawning or during natural dispersal. Many of these resident fish species are hosts for freshwater mussels and their ability to disperse helps mussels recolonize new areas and allows better genetic exchange. No reliable safe downstream passage for fish is provided at the Project during low flow periods. The Service does not recognize passage through the turbine intakes as an acceptable downstream route for fish (Service 2019). Fish that pass through the intake and turbines are subject to injury or mortality from entrainment. The only other viable downstream passage routes are through the Obermeyer gate at low flow and over the dam at high flow. Fish that pass through the Obermeyer gate are subject to injury or mortality as there is no plunge pool and fish would impact bedrock/dam face before entering the pool at the base of the dam. In addition, any fish currently surviving passage through the Obermeyer gate may be subjected to low minimum flow, high temperature and low dissolved oxygen within the bypass reach. Therefore, Appalachian should develop PM&E measures to modify Project operations or Project components to provide safer downstream passage for fish during low flow periods including safer passage through the Obermeyer gate. A PM&E measure to provide higher minimum flows in the bypass reach is also needed to ensure water quality and flow is sufficient to allow safe downstream passage through the Project.

Section E.10.3, Wetlands, Botanical, and Terrestrial Resources, Protection, Mitigation, and Enhancement Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties: This section states that there are no plans for improvements or activities at the Project that would require the clearing of potentially suitable roosting habitat or trees that may support maternity colonies for protected bat species. This statement is confusing. This statement implies that a habitat

assessment was conducted and that some clearing may occur but only in areas that are not suitable habitat. This issue should be clarified.

This section states that in the event such clearing activities were proposed to be undertaken in the future in support of Project operation, modifications, or development of new recreational facilities within the Project Boundary, Appalachian would consult or coordinate with the Service in advance of the proposed activities. The section further states that similar consultation would be expected to occur if activities were proposed that could potentially affect other protected species, including bald eagles. The Service agrees with this approach. For any future construction/maintenance activities, Appalachian should use our online project review process (https://www.fws.gov/northeast/virginiafield/endangered/projectreviews.html) which includes a search using the Information for Planning and Consultation system, to identify any federally proposed or listed species and proposed or designated critical habitat that may occur in the action area. The Service recommends a specific PM&E measure be developed to require Appalachian to coordinate with the Service on any construction/maintenance activities that occur at the Project during the licensing period to ensure that impacts to federally proposed or listed species and proposed or designated critical habitat are avoided and minimized.

Section 7(a)(2) of the ESA requires every Federal agency, in consultation with and with the assistance of the [Department of the Interior] Secretary, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or results in the destruction or adverse modification of critical habitat (50 CFR 402.01). If FERC determines that proposed operation of the Project, including but not limited to activities proposed to be undertaken in the future in support of Project operation, modifications, or development of new recreational facilities, may affect federally proposed or listed species and/or proposed or designated critical habitat that may occur in the action area, FERC should request consultation with the Service pursuant to the ESA and its implementing regulations.

Exhibit H, Plans and Ability of the Applicant to Operate the Project

Section H.6, Modifications to Project Facilities and consistency with Comprehensive Plans: This section states that the Project facilities and operations described in this Application are compatible with the comprehensive waterway plans for the Roanoke River. The Service thinks it is premature for Appalachian to make this conclusion as the effects of continued operations on RLP have not yet been fully evaluated.

Thank you for your consideration of our comments on the Application. If you have any questions, please contact John McCloskey of this office at (804) 824-2404 or john_mccloskey@fws.gov.

Sincerely,

Cindy Schulz
Field Supervisor
Virginia Ecological Services

cc: Service, State College, PA (Attn: Rick McCorkle)
Service, Hadley, MA (Attn: Jessica Pica)
VDEQ, Richmond, VA (Attn: Brian McGurk)

VDWR, Forest, VA (Attn: Scott Smith)
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VDWR, Richmond, VA (Attn: Amy Martin)

Literature Cited

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Via Electronic Filing

December 27, 2021

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Niagara Hydroelectric Project (FERC No. 2466-034)
Filing of Updated Study Report Meeting Summary

Dear Secretary Bose:

Appalachian Power Company (Appalachian or Licensee), a unit of American Electric Power (AEP), is the Licensee, owner, and operator of the run-of-river, 2.4-megawatt Niagara Hydroelectric Project (Project) (Project No. 2466), located on the Roanoke River in Roanoke County, Virginia.

The Project is currently licensed by the Federal Energy Regulatory Commission (FERC or Commission). The Project underwent relicensing in the early 1990s, and the current operating license for the Project expires on February 29, 2024. Accordingly, Appalachian is pursuing a subsequent license for the Project pursuant to the Commission's Integrated Licensing Process (ILP), as described at 18 Code of Federal Regulations (CFR) Part 5.

Pursuant to 18 CFR § 5.15(c), Appalachian filed the Updated Study Report (USR) with the Commission on December 6, 2021. The USR filing also included notification of the USR Meeting date, time, and proposed agenda. As required by the ILP schedule, within 15 days of the USR filing, Appalachian held a virtual USR Meeting via WebEx from 9:00 am to 4:00 pm on Wednesday, December 14, 2021.

Pursuant to 18 CFR § 5.15(c)(3), Appalachian hereby files the USR Meeting summary for Commission and stakeholder review. The USR Meeting presentation is included as an attachment to the USR Meeting summary.

If there are any questions regarding this filing, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
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Meeting Summary

Project:	Niagara Hydroelectric Project (P-2466)
Subject:	Updated Study Report Meeting Summary
Date:	Tuesday, December 14, 2021
Location:	WebEx Virtual Meeting
Attendees:	Jonathan Magalski (AEP) Elizabeth Parcell (AEP) Fred Colburn (AEP) Sarah Kulpa (HDR) Maggie Salazar (HDR) Kerry McCarney-Castle (HDR) Misty Huddleston (HDR) Ty Ziegler (HDR) Eric Mularski (HDR) Joe Dvorak (HDR) Jon Studio (EDGE) Frank Simms (YES) Jeremy Feinberg (FERC) Laurie Bauer (FERC) Woohee Choi (FERC) Samantha Pollak (FERC) John McCloskey (USFWS) Scott Smith (VDWR) Lindsay Webb (Roanoke County – Parks Planning and Development Manager) Amanda McGee (Roanoke Valley – Alleghany Regional Commission) Paul Angermeier (VA Tech) Brian McGurk (VDEQ) Laura Galli (VDEQ) Harold Peterson (Bureau of Indian Affairs) Frank Maguire (Roanoke Valley Greenway Commission)

Overview

This document provides the meeting summary for Appalachian Power Company's (Appalachian) Niagara Hydroelectric Project (Project) Updated Study Report (USR) Meeting. The meeting was held via WebEx to review with stakeholders the progress and results of the USR, which was filed with the Federal Energy Regulatory Commission (FERC) on December 6, 2021. The USR can be accessed from either FERC's website or from the website: http://www.aephydro.com/HydroPlant/Niagara. A copy of the meeting presentation is included with this meeting summary as Attachment 1.

Safety Moment

Maggie Salazar presented a safety moment on Seasonal Affective Disorder (SAD) and the importance of staying active, eating healthy, and getting fresh air during the winter months, and especially around the holidays.

Welcome and Introductions (Slides 1-6)

Jon Magalski introduced the Niagara Project and the USR meeting goals and objectives and encouraged participation and feedback. He provided an overview of the agenda and the completed and upcoming Integrated Licensing Process (ILP) schedule milestones. The studies presented in the USR were completed in the first (2020) and/or second (2021) ILP study seasons:

- Shoreline Stability Assessment
- Wetlands, Littoral, and Riparian Habitat Characterization
- Cultural Resources Study
- Recreation Study
- Fish Community Study
- Benthic Aquatic Resources Study
- Water Quality Study
- Bypass Reach Flow and Aquatic Habitat Study

If revisions are made to any of the study reports based on today's discussion or comments on the USR, revised study plans will be filed with the final license application (FLA) (due to FERC February 28, 2022). The focus of today's presentation and discussion is studies or study progress completed in 2021 and not previously covered by the Initial Study Reports (ISR)/ISR meeting held on January 21, 2021.

Shoreline Stability Assessment (Slides 7-22)

Eric Mularski (HDR study lead) introduced the study, methodology, and results of the Shoreline Stability Assessment. (Note: this study was initiated and completed in 2021 and thus was not included in the ISR.)

Study Results

Results of the study did not identify any areas of active erosion upstream of Niagara Dam, the tailrace, or in the bypass reach. Erosion Areas 10-13 and 16-19 categorized as "high" are in the upstream reach of Tinker Creek and downstream of the confluence of Tinker Creek and the Roanoke River. These areas are most susceptible to high flows during storm events (i.e., flash floods) and subsequent potential accelerated erosion rates. Appalachian proposes to continue operating the Project as currently operated, including run-of-river operations. Appalachian does not propose remediation of any shoreline areas in the Project boundary at this time.

Stakeholder Questions/Comments

No comments or questions were raised on this study.

Wetlands, Riparian, and Littoral Habitat Study (Slides 23-44)

E. Mularski (HDR study lead) introduced the study, methodology, and results of the Wetlands, Riparian, and Littoral Habitat Study. (Note: this study was initiated and completed in 2021 and thus was not included in the ISR.)

Study Results

Wetland, riparian, and littoral habitats at the Project are reflective of current Project operations. Approximately 61.4 acres of wetlands identified during the desktop study using the National Wetlands Inventory (NWI) database were confirmed, and an additional 12.4 acres of features (not included in the NWI) were verified in the field (2.4 acres of emergent and 10 acres of forested wetlands). Forested wetlands were located in higher floodplains and point bars of the Roanoke River while emergent wetlands occurred as fringe wetlands along the shoreline floodplains of the Roanoke River, notably upstream of Niagara Dam. Forested wetland vegetation included American sycamore (*Platanus occidentalis),* box elder (*Acer negundo)*, black walnut (*Juglans nigra*), silver maple (*Acer saccharinum*), and tulip poplar (*Liriodendron tulipifera*) and the understory was comprised of spice bush (*Lindera benzoin*), green ash (*Fraxinus pennsylvanica*) Japanese stilt grass (*Microstegium vimineum*), jewelweed (*Impatiens capensis*), false nettle (*Boehmeria cylindrica*), and wood nettle (*Laportea canadensis*). The dominant herbaceous species for emergent wetlands included Japanese stilt grass, falsenettle (*Boehmeria cylindrica*), and maypop (*Passiflora incarnata*). Palustrine unconsolidated bottom waterbodies were also identified in the impounded section upstream of the Niagara Dam. The riparian area consisted of approximately 65 acres and occurs mainly along the shoreline, on islands, and within the bypass reach; riparian areas are characteristic of the Virginia Department of Conservation and Recreation (VDCR) Piedmont/Mountain Floodplain Forest and Swamp community type. For littoral zones, no submerged aquatic vegetation was collected in the four transects located in the reservoir. Water willow beds were mapped in the bypass reach in low-flow pools close to the banks and between the rocky outcropping.

Operations and maintenance of the Project are not anticipated to have any long-term adverse impacts on wetland, riparian, and littoral resources, and there are no plans that would require disturbance of wetlands or tree clearing activities.

Stakeholder Questions/Comments

Brian McGurk asked for clarification regarding the slide on temporary impacts to wetlands due to drawdowns. Sarah Kulpa explained that the slide B. McGurk was referring to was inadvertently a carry-over from the Byllesby-Buck presentation for AEP as there are no significant or regular drawdowns at Niagara. J. Magalski agreed with S. Kulpa and stated that Niagara operations remain within the licensed operating band.

Cultural Resources Study (Slides 45-51)

Study Results

Terracon Consultants, Inc. (Terracon) conducted an archaeological assessment of the Project's Area of Potential Effects (APE) in October 2020 and a geomorphological investigation in April 2021.

There are three aboveground historic properties within the APE: the Blue Ridge Parkway Historic District, the Blue Ridge Parkway Bridge, and the Virginian Railway.

No historic properties are currently being adversely affected by the Project; therefore a Historic Management Plan is not necessary. The Cultural Resources Study Report was distributed with the Initial Study Report and was therefore not provided with the USR.

Stakeholder Questions/Comments

Samantha Pollak asked if it was Terracon's conclusion that there are no historic properties being affected and also asked for confirmation that the study report was distributed to the State Historic Preservation Officer (SHPO) and the tribes. S. Kulpa confirmed it was Terracon's conclusion and that the study report was sent to SHPO and tribes; and no comments have been received to date.

Recreation Study (Slides 53-76)

M. Salazar (HDR study lead) introduced the study, methodology, and results of the Recreation Study. This study was initiated in 2020 and completed in 2021. Frank Simms (YES study lead) presented the recreation use documentation methods and results.

Study Results

The Roanoke River is a significant recreation and amenity resource for the Roanoke Valley providing numerous and varied opportunities for those residing in the area as well as those visiting from outside including canoeing, kayaking, fishing, tubing, wading, wildlife viewing, and watershed education. Recreation facilities in the vicinity of the Niagara Project are utilized each month of the year with most activities taking place from April through October.

Users are satisfied with the facilities provided with the exception of the canoe portage. However, users are recreating at the Project facility more than anticipated. Efforts to improve the canoe portage could include: (1) improvements to the existing take-out and put-in locations; (2) improved signage directing canoeists and kayakers to the take-out and put-in locations and along the portage trail itself; (3) a mechanism to assist those utilizing the portage with transporting canoes and kayaks; and (4) an education program informing the public of the availability of the portage and that the reservoir is open to use by all for recreation.

Appalachian plans to develop a draft Recreation Management Plan (RMP) for the Project, in consultation with agencies and other recreation stakeholders, to guide development and maintenance of recreation facilities and opportunities at the Project over the new license term.

Stakeholder Questions/Comments

Amanda McGee stated that Roanoke County put up notices for recreationists and visitors to stay away from the areas around the Blue Ridge Parkway bridge construction, and that may have deterred users from trying to access these facilities over the course of this year. She added that the fact that people still use the facilities for recreation despite the signs and construction is a testament that recreation near the Project is an important component of the Project relicensing and thanked Appalachian/HDR/YES for performing this study.

Lindsay Webb noted the Draft License Application (DLA) mentioned that the Project portage put-in below Niagara Dam (river left) is outside the Project boundary and asked for clarification. S. Kulpa stated that Appalachian and HDR were initially under the assumption that it was in the Project boundary based on initial drawings. However, during the development of the updated Exhibit G to current FERC Project boundary map standards for the DLA, it became apparent the put-in below the dam is actually outside the Project boundary on National Park Service-owned land. S. Kulpa asked if S. Pollak would be willing to offer general FERC guidance on the relationship between licensed project recreation facilities to the

FERC Project boundary in a generic sense. S. Pollak stated it would be difficult to say at this point until the location is mapped out with certainty and deferred review and resolution of the issue to the FLA. S. Kulpa added that if the land in question was owned by AEP it would be less of an issue; however, it is owned by National Park Service. National Park Service has not provided comments on this issue and did not join the call last year with recreation stakeholders.

L. Webb asked about the timeline for the draft RMP. S. Kulpa stated that Appalachian anticipates filing the draft RMP with the FLA. FERC would include a license article requiring the implementation of the RMP in the new license term (typically shortly after license issuance).

L. Webb asked whether the trail camera was also installed at the take-out location above the dam. F. Simms stated that there was only one camera and it was installed at the put-in. S. Pollak asked if the only way to access the portage is via the river. S. Kulpa confirmed and asked if F. Simms or Appalachian could weigh in regarding how one might access the portage if not accessing via the water. F. Simms stated there are informal trails and there is also a road that could be used to hike in and access the portage, although it is not likely. Elizabeth Parcell agreed and added that accessing via the road would be unlikely, but there are subdivisions in the area that one could hike in from.

S. Pollak asked where the closest put-in downstream of the Project is. F. Simms stated the next downstream put-in is Rutrough Point, followed by an additional put-in five river miles downstream at Smith Mountain Lake.

S. Pollak asked if Appalachian looked at adding access to the river on river right downstream of the dam. F. Simms stated that yes, access on river right was looked at several different ways and it was determined building a trail was infeasible due to trail length, topography, and property issues. L. Webb mentioned that negotiations for property access to construct the greenway continue and they will keep Appalachian updated on any new developments. S. Pollak requested that Appalachian state clearly in the FLA that river right has been evaluated and ruled out for a potential recreation access point.

L. Webb asked for confirmation that Appalachian is not proposing recreation releases at this time. J. Magalski confirmed this was correct.

Fish Community Study (Slides 78-101)

Misty Huddleston (HDR study lead) introduced the study, methodology, and results of the Fish Community Study. The Fish Community Study includes three separate studies: 1) 2020 Fish Community Study; 2) 2021 Roanoke Logperch Survey and 3) Impingement and Entrainment Study. The 2020 Fish Community Survey was covered in the ISR. M. Huddleston noted that the Roanoke Logperch larval drift study has not yet been completed due to a combination of weather and permitting delays and the field work will be carried out in spring 2022. Jon Studio of EDGE Engineering and Science (EDGE) provided high level methods and results of the Roanoke Logperch Survey.

Study Results

Roanoke Logperch Survey

The Roanoke Logperch Survey results indicated Roanoke logperch were documented in poor to excellent quality habitats at all of the survey sites with the greatest density in the bypass reach. There were 61 Roanoke logperch observations (7 juvenile and 54 adult) distributed amongst excellent (9), good (28), fair

(22), and poor (2) quality habitats. Site densities ranged from 4.6 to 72.4 logperch/hectare, while the mean density within the overall Project boundary was 32 fish/hectare. Mean density above Niagara Dam (23 logperch/hectare) compared to below Niagara Dam (24 logperch/hectare) was similar. Mean density in Tinker Creek at 32 fish/hectare. The average density of Roanoke Logperch between the spring and summer sample events in the bypass reach was 58 fish/hectare. Results suggest that the Roanoke River in the Project boundary is supporting a robust population of Roanoke logperch.

Impingement and Entrainment Study

The turbine blade strike analysis was initiated in 2020 and completed in 2021. Cumulative passage survival for 4-inch Roanoke logperch was between 81.4 and 96.0 percent. The highest cumulative survival would occur at the 0.01% flow exceedance when approximately 18,109 cfs of river flows would be spilled into the bypass channel. Survival increases with increasing spill volume due to low spill mortality and reduced blade strike probability. Risk of spillway mortality was low at 0.1 percent or less across all fish length classes. Fish length classes most at risk of entrainment (<6 inches) are estimated to have cumulative downstream passage survival between 73.7 and 91.3 percent.

Stakeholder Questions/Comments

Roanoke Logperch Survey

Paul Angermeier stated that he was impressed by the findings of study and was surprised by the high densities in the bypass reach and asked J. Studio if he could weigh in on the results. J. Studio replied that along the stretch of main-stem river (between Niagara and Smith Mountain) there are only a few habitat patches that would provide decent habitat for Roanoke logperch, so as fish are moving and looking for new habitat, they may move into the bypass reach, where there is abundant suitable habitat available.

John McCloskey asked about the flows in the bypass reach during the Roanoke logperch survey windows and how close flows were to minimum required flows. J. Studio replied that during the early and late summer efforts, flows in the bypass reach were around 20 cubic feet per second (cfs). Ty Ziegler stated that the minimum required is 8 cfs and that the Roanoke logperch study was coordinated with the hydraulic modeling study; the days that EDGE was in the bypass reach had flows measured at 24 cfs.

J. McCloskey reiterated that the main concern is determining if Roanoke logperch could be supported during minimum flows and the conclusions do not support that finding since there were no surveys carried out under minimum flows. S. Kulpa added that we will spend time in the afternoon talking about flows in the bypass reach and perhaps the conversation could be tabled until the Bypass Reach Flow presentation.

Laurie Bauer asked how densities were estimated and what is the difference between catch per unit effort (CPUE) and density. J. Studio replied that the density estimate takes into account visibility underwater so CPUE is typically lower than density values.

Impingement and Entrainment Study

J. McCloskey stated that he has concerns regarding HDR’s conclusion that early life stages are not susceptible to entrainment because that conclusion does not account for potential larval drift into the Project. M. Huddleston clarified that based on where spawning habitat is found, there is a lower risk of drift; however, the Roanoke logperch larval drift study will shed some light on these estimates. J.

McCloskey agreed that the Roanoke logperch larval drift study should help determine the risk for drift into the Project and subsequent entrainment.

Benthic Aquatic Resources Study (Slides 102-110)

M. Huddleston (HDR study lead) introduced the study, methodology, and results of the Benthic Aquatic Resources Study. J. Studio (EDGE study lead) covered macroinvertebrate and crayfish study methods and results. The mussels survey portion of this study was presented in the ISR.

Study Results

There were 38 macroinvertebrate taxa collected from 2 quantitative sites and 3 qualitative sites upstream of Niagara Dam and 45 macroinvertebrate taxa from 3 quantitative and 2 qualitative sites downstream of the dam. VSCI scores indicate impaired conditions above and below Niagara Dam in both fall and spring samples. Crayfish community diversity and abundance was low compared to the number of known crayfish species in Virginia. Five species of crayfish collected and identified in the field during survey efforts at 8 of the 10 sites. More invasive crayfish species were documented in the Project boundary than native species. Native Species were two native species upstream and one downstream of dam and included Appalachian Brook Crayfish (*Cambarus bartoni bartoni*) and Atlantic Slope Crayfish (*Cambarus longulus*). *Invasive Species* were two species upstream and three species downstream of dam including Ozark Crayfish (*Faxonius ozarkae*), Virile Crayfish (*Faxonius virilis*), and Red Swamp Crayfish (*Procambarus clarkii*).

Stakeholder Questions/Comments

No comments or questions were raised on this study.

Water Quality Study (Slides 112-127)

T. Ziegler (HDR study lead) introduced the study, methodology, and results of the Water Quality Study. This study was initiated in 2020 and completed in 2021; results from 2020 were covered in the ISR.

Study Results

Water temperatures, dissolved oxygen (DO) concentrations, and pH measurements largely met Virginia Class IV (Roanoke River) and Class VII (Tinker Creek) water quality standards during 2021. The exception was the instantaneous DO standard (4 mg/l) at the upstream bypass reach monitoring location during the hottest portion of the summer when bypass flows were at the 8.0 cfs minimum required flow release. Increasing the bypass reach flow to ~20 cfs resulted in increased DO concentrations at this location. Specific conductivity and pH ranges are suitable for aquatic species. Little to no thermal or DO stratification at the reservoir and forebay monitoring locations except during periods of low Project inflows or powerhouse outages.

Stakeholder Questions/Comments

J. McCloskey asked about the timing of the minimum flow increase from 8 cfs to 20 cfs and how long it persisted. T. Ziegler replied that after the first three data sonde download events (in which biofouling was observed to occur almost immediately after deployment), the minimum flow was raised to see if that might have a positive effect on reducing biofouling at the upper monitoring location. This appeared to be the

case during the 2 – 3 days immediately following the increase in bypass reach flow (i.e., little to no biofouling was evident after deployment). Several days after the minimum flow was raised, rainfall runoff from Tropical Storm Fred resulted in much higher flows in the bypass reach (i.e., up to approximately 4,400 cfs). By the time bypass flows returned to more normal levels, biofouling was less of an issue at this upper monitoring location during the remainder of the study period.

J. McCloskey asked if discrete DO values were measured in different portions of the upper bypass reach to see if the low values were real or if it was due to biofouling. T. Ziegler mentioned that discrete measurements were collected during the daytime so it would not capture any potential DO sag which would occur during nighttime hours. However, during the first three download events, discrete DO measurements were all much higher than the continuous deployed data sondes indicating biofouling had occurred. The continuous deployed data sondes also showed visible evidence of biofouling.

B. McGurk asked if there is standard information regarding how much biofouling would it take to reduce the DO below state standards. T. Ziegler stated that when discrete measurements were taken at the same time as the data sonde that had been deployed for two weeks, the discreet measurement were always much higher, such that the lower values measured with the in situ data sonde were assumed to be the result of biofouling.

J. McCloskey asked about the pools / stagnant areas in the bypass reach and wondered how much of that low flow area is present in the bypass reach. J. Dvorak pointed out the location of four pool areas in the bypass reach that could be stagnant at the minimum 8 cfs bypass reach flow requirement. Water quality data was collected in the upstream most of these pool areas, which represented the largest of the four pool areas.

B. McGurk asked for an example of a Protection, Mitigation, and Enhancement (PM&E) measure for water quality. S. Kulpa explained what a PM&E measure is and stated that examples might include flow releases or modified operations, continued monitoring, or DO mitigation. She reiterated that an impact that would require mitigation was not identified as a result of the study; however, Appalachian welcomes feedback from the stakeholders.

J. McCloskey asked how HDR/Appalachian could come to the conclusion that there are no PM&E measures required since it seems there is a documented problem with water quality in the bypass reach (i.e., low DO). S. Kulpa stated that it is not uncommon to have periods of low DO in a bypass reach in slow-moving pools and HDR has documented this at other facilities bound by similar water quality standards and licensing processes but noted that Appalachian is looking to this group for comment/feedback. J. Magalski weighed in that trying to maintain DO in every single pool may not be feasible due to flow requirements for different species in a stream reach.

J. McCloskey stated that the study is not comprehensive due to the low number of locations monitored and has concerns whether low DO is constrained to just that one pool that was measured or if it’s a common occurrence in the bypass reach. J. Magalski indicated there were other DO measurements collected in the bypass reach and T. Ziegler agreed that there was one continuous monitor on the upstream end in the pool and one in the downstream reach; data sondes collected data through the 4-month study period and discreet measurements were also taken at those locations. J. Studio weighed in that they also took several DO measurements (discrete) in proximity to sampling sites, but not in the area of the bypass reach.

S. Kulpa stated that when the monitoring program was initiated, the data sondes were installed in what was considered the worst-case scenario locations (i.e., most conservative). It is therefore anticipated that adequate data to represent the bypass reach water quality conditions have been collected. T. Ziegler also added that pools where low DO values would be expected were chosen on purpose to derive conservative estimates. On the side-by-side comparisons with data rovers (i.e., discrete measurements), there were no values measured less than state standards, so it is assumed biofouling on the in situ sondes caused the low values.

L. Bauer asked what the percentage of low flow habitat in the bypass reach is. T. Ziegler referred to the aerial photograph of the bypass reach and Joe Dvorak shared his screen to show areas of low/stagnant flow conditions/pools and pointed out the main flow path(s) on the aerial image.

Bypass Reach Flow and Aquatic Habitat Study (Slides 129-157)

T. Ziegler (HDR study lead) introduced the study, methodology, and results of the Bypass Reach Flow and Aquatic Habitat Study. This study was initiated in 2020 and completed in 2021.

Study Results

A variety of habitat types are available in the bypass reach including shoals, shallow and deep pools, riffles, and runs. Substrate is dominated by larger particle sizes: cobble, boulders, and irregular bedrock. Over the calibration flow range, bypass reach average depths increased approximately 0.5 feet and average velocities increased approximately 0.8 feet per second. Travel times varied from approximately 35 minutes (low flow) to 16 minutes (high flow). Habitat model results indicate suitable habitat for the four guilds and Roanoke Logperch standalone target species under all four modeled flow scenarios. Model results for species/life stages that prefer larger substrate sizes with cover generally had larger amounts of potential habitat available. Potential available habitat generally increases as bypass flows increase with most of the incremental gain between the lowest modeled flow (7 cfs) and the two middle flows (24 – 33 cfs). Model results for Roanoke logperch indicate preferred habitat is primarily along the main flow path in the bypass reach, which is in agreement with the Roanoke logperch observation data collected during 2021.

Stakeholder Questions/Comments

Woohee Choi asked for confirmation on flows for calibration results. T. Ziegler confirmed the flows in question.

L. Bauer asked for confirmation regarding calibration flows and the difference between target flows and actual flows. T. Ziegler explained that HDR asked that the Obermeyer gate be set early in the morning and the forebay elevation held stable so that flows would be consistent during the field work. There is a difference between target flows and what was measured because it is difficult to hold the pond elevation steady, therefore some difference between target flows and measured flows is expected. Additionally, the flow measurement transect was not an ideal measurement transect due to irregular bathymetry so manual flow measurements may have some level of error, but within limits of uncertainty. In summary, a good dataset with enough separation between flows was achieved. J. Dvorak added that Obermeyer gates are not able to be set perfectly when the system is fluctuating, especially within fractions of an inch. Additionally, the target vs. generation flows isn't the biggest predictor of model accuracy, it's critical to

match elevations and travel times at the lower flows where there is uncertainty surrounding the streambed roughness/bathymetry.

B. McGurk asked about the heat maps and if there are significant differences in the heat maps between the four test flows. T. Ziegler showed the Water Surface Elevation plot and indicated there is a maximum elevation difference of about a foot. There's about a 25 percent increase in wetted between 8 cfs and 24 cfs. J. Dvorak showed his screen to compare the depths and velocities for all four modeled velocities showing the same pattern under all flow scenarios.

W. Choi asked about Manning's n values during low flow. J. Dvorak showed a National Landcover Database map and stated that a 0.025 Manning's n was used for the main channel for roughness since it is the standard. Since the same model is being used to determine different flow scenarios, the best fit roughness coefficient was chosen based on best professional judgement.

J. McCloskey asked if areas of habitat could be calculated. J. Dvorak answered that yes, areas of weighted habitat have been calculated and gave examples. J. McCloskey asked if that information is included in the report. J. Dvorak stated that no, it is not currently included in the study report but indicated that data for all species and life stages that were analyzed could be added. J. McCloskey stated it would be helpful to have that data. **Action Item** (HDR): Requested information to be provided in the final study report to be filed with the FLA.

B. McGurk asked if there was a time constraint to Habitat Suitability Index (HIS) values. T. Ziegler discussed periodicity but said habitat results for the guilds and standalone Roanoke Logperch assume all species and life stages could be present at any time of year. So, no time constraints related to HSI were factored into the analysis.

J. Studio added that the percentage of substrate types in the bypass reach area (bedrock / boulders) would not change between the four flow scenarios and that would be a good indicator for HSI because substrate carries a lot of weight in the model. So while there wouldn't be much of a change in habitat suitability due to the substrate in quickly changing flows, there may be a difference in the length of time which species would inhabit different areas (e.g., in contrast to the same flow over 2 months).

T. Ziegler explained HSI complexities and stated that since it is based on a multiplication factor, any individual zero value for depth, velocity, and/or substrate would result in a prediction of zero habitat available at a given flow scenario.

J. Studio added that when one is interpolating, an area might have adequate suitable habitat, but during interpolation, that single point looks less suitable because it is surrounded by non-suitable habitat. This method is standard and acceptable but wouldn't point out high resolution areas of suitable habitat (i.e. a square meter of habitat).

L. Bauer asked if it would be possible to set a background value of 0 to show relative suitable habitat. In other words to remove the zeros. **Action Item** (HDR): Show habitat suitability maps with zeros indicated (or removed) in the FLA.

J. McCloskey asked if habitat was assessed with flows strictly coming over the spillway. T. Ziegler said that was not assessed and J. Dvorak agreed, but HDR/Appalachian welcomes the feedback for consideration. J. McCloskey stated that the habitat may be affected on the side opposite the gate. J. Dvorak stated that in the Integrated Catchment Model (ICM) calibration, bathymetry data could not be collected in the pool area immediately below the toe of the spillway. As a result, modeled habitat

differences in this immediate pool area would be negligible between spilling over the spillway or via the Obermeyer gate. Also, regardless of how the flow is delivered to the bypass reach, all flow has to work its way through the same narrow gap at the base of the spillway pool, so downstream flow patterns (and thus available habitat results) would be similar regardless of how the flow is delivered to the bypass reach. J. McCloskey indicated that it would depend on the amount of water over the spillway but likely wouldn't have huge effect on habitat.

Scott Smith recommended plotting the location of the Roanoke logperch survey locations on the habitat suitability on the maps. J. Studio shared his screen to indicate where the transects were performed. **Action Item** (HDR): Show Roanoke logperch observation locations on model results maps and include in the FLA.

S. Smith asked if it was possible to modify the model to drop the substrate component to determine what results would look like with just depth and velocity components. **Action Item** (HDR): HDR will provide the depth and velocity maps at each model calibration flow in the revised study report to be filed with the FLA. These, in combination with mesohabitat maps, can be used to determine the effect that each of the three HSI parameters have on the habitat results.

S. Kulpa reiterated Appalachian would like to get comments on what stakeholders would like considered for the FLA other than the action items already highlighted. There were no further requests or comments.

Next Steps and Discussion

J. Magalski reviewed key milestones for the ILP including meeting summary, stakeholder requests, FERC determination.

Stakeholder Questions/Comments

Appalachian and Virginia Department of Environmental Quality (VDEQ) discussed timing of the filing of the Virginia Water Protection (VWP) Permit/401 Water Quality Certification (WQC) application relative to the deadline established by FERC's regulations (60 days from FERC's Ready for Environmental Analysis). L. Bauer stated that for the Niagara Project, FERC would not issue the Ready for Environmental Analysis until after staff have reviewed and processed the study report on the Roanoke Logperch larval study.

Action Item (Appalachian): Connect with the VDEQ to discuss the process and schedule for the 401 WQC.

Attachment 1

Attachment 1 – USR Meeting Presentation

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Niagara Hydroelectric Project

Updated Study Report Meeting
December 14, 2021

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Safety Moment

SAD- Seasonal Affective Disorder

- In most cases, seasonal affective disorder symptoms appear during late fall or early winter and go away during the sunnier days of spring and summer. Less commonly, people with the opposite pattern have symptoms that begin in spring or summer.
  - Feeling depressed most of the day, nearly every day
  - Losing interest in activities you once enjoyed
  - Having low energy
  - Having problems with sleeping
  - Experiencing changes in your appetite or weight
  - Feeling sluggish or agitated
  - Having difficulty concentrating
  - Feeling hopeless, worthless or guilty

Updated Study Report

- Appalachian is pursuing a new license for the Project pursuant to the Commission's Integrated Licensing Process (ILP), as described at 18 Code of Federal Regulations (CFR) Part 5.

- The Updated Study Report (USR) filed on December 6, 2021 describes the methods and results, the data collected, and any variances from the study plan and schedule.

- The Federal Energy Regulatory Commission's (FERC) regulations at 18 CFR § 5.15(f) requires Appalachian to hold a USR Meeting within 15 days of filing the ISR.

- The purpose of the USR Meeting is to discuss the study results.

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Meeting Agenda

Topic	Schedule
Welcome and Introduction	9:00 AM – 9:10 AM
Shoreline Stability Study	9:10 AM – 9:35 AM
Wetlands, Riparian, and Littoral Habitat Study	9:35 AM – 10:00 AM
Cultural Resources Study	10:00 AM – 10:15 AM
Morning Break	10:15 AM – 10:30 AM
Recreation Study	10:30 AM – 11:30 AM
Lunch Break	11:30 AM – 12:00 PM
Fish Community Study • Roanoke Logperch Survey • Impingement and Entrainment Benthic Aquatic Resources Study	12:00 PM – 1:15 PM
Water Quality Study	1:15 PM – 2:15 PM
Afternoon Break	2:15 PM – 2:30 PM
Bypass Reach Flow and Aquatic Habitat Study	2:30 PM – 3:30 PM

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Process Plan and Schedule

Date	Milestone
January 28, 2019	Appalachian Filed NOI and PAD (18 CFR §5.5, 5.6)
March 26, 2019	FERC Issued Notice of PAD/NOI and Scoping Document 1 (SD1) (18 CFR §5.8(a))
April 24-25, 2019	FERC Conducted Scoping Meetings and Site Visit (18 CFR §5.8(b) (viii))
July 9, 2019	FERC Issued Scoping Document 2 (SD2) (18 CFR §5.10)
July 9, 2019	Appalachian Filed Proposed Study Plan (PSP) (18 CFR §5.11(a))
August 1, 2019	Appalachian Held Study Plan Meeting (18 CFR §5.11(e))
November 6, 2019	Appalachian Filed RSP (18 CFR §5.13(a))
December 6, 2019	FERC Issued the SPD (18 CFR §5.13(c))
July 27, 2020	Appalachian Submitted First Quarterly Report, ILP Study Update, and Request for Extension of Time File ISR
August 10, 2020	FERC Issued Order Granting Appalachian Extension of Time for Filing of ISR
August – November 2020	Appalachian Conducted First Season of Field Studies (18 CFR §5.15(a))
October 27, 2020	Appalachian Submitted Second Quarterly Progress Report (18 CFR §5.15(b))
December 22, 2020	FERC Issued Scoping Document 3 (SD3)
January 11, 2021	Appalachian Submitted ISR (18 CFR §5.15(c)(1))
February 5, 2021	Appalachian Filed ISR Meeting Summary
April 30, 2021	Appalachian Submitted Third Quarterly Progress Report (18 CFR §5.15(b))
July 22, 2021	Appalachian Submitted Fourth Quarterly Progress Report (18 CFR §5.15(b))
October 1, 2021	Appalachian Filed Draft License Application (DLA) (18 CFR §5.16(a))
November 2, 2021	Appalachian Submitted Fifth Quarterly Progress Report
December 6, 2021	Appalachian filed USR (18 CFR §5.15(f))

Studies Approved in the SPD

FERC's December 6, 2019 Study Plan Determination (SPD) directed Appalachian to conduct eight studies:

1. Bypass Reach Flow and Aquatic Habitat Study
2. Water Quality Study
3. Fish Community Study
4. Benthic Aquatic Resources Study
5. Wetlands, Riparian, and Littoral Habitat Characterization Study
6. Shoreline Stability Assessment Study
7. Recreation Study
8. Cultural Resources Study

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Upcoming ILP Milestones

Date	Milestone
December 14, 2021	Appalachian Host USR Meeting (18 CFR §5.15(f))
December 29, 2021	Appalachian File USR Meeting Summary (18 CFR §5.15(f))
December 30, 2021	Stakeholders File Comments on DLA (18 CFR §5.16(e))
January 28, 2022	Stakeholders File Disagreements with USR Meeting Summary (18 CFR §5.15(f)(4)) (if necessary)
February 27, 2022	Appalachian File Response to USR Meeting Summary Disagreements (18 CFR §5.15(f)(5)) (if necessary)
February 28, 2022	Appalachian File Final License Application (18 CFR §5.17)

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Shoreline Stability Assessment Study

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Shoreline Stability Assessment Study

Study Goal and Objectives:

- Survey the Project's reservoir, bypass reach, and tailrace area to characterize the shoreline, with the focus on erosion or shoreline instability using the Bank Erosion Hazard Index (BEHI),
- Inventory, map, and document any areas of erosion or shoreline instability, and
- Prioritize any areas where remedial action or further assessment may be needed.

Shoreline Stability Assessment Study

Background and Existing Information:

- Existing riparian vegetation is mainly intact along the shorelines of Project reservoir.
- The upstream portion of the study area (Tinker Creek and upstream reach of the Roanoke River) is in an urban area associated with the City of Roanoke and town of Vinton. Riparian buffers are limited in the upstream portions of the study area and become wider downstream of the confluence of the Roanoke River and Tinker Creek.
- Urban areas have large areas of impervious surface; therefore, the upper Roanoke River and Tinker Creek watershed experience flashy stormwater flows during rainfall events.

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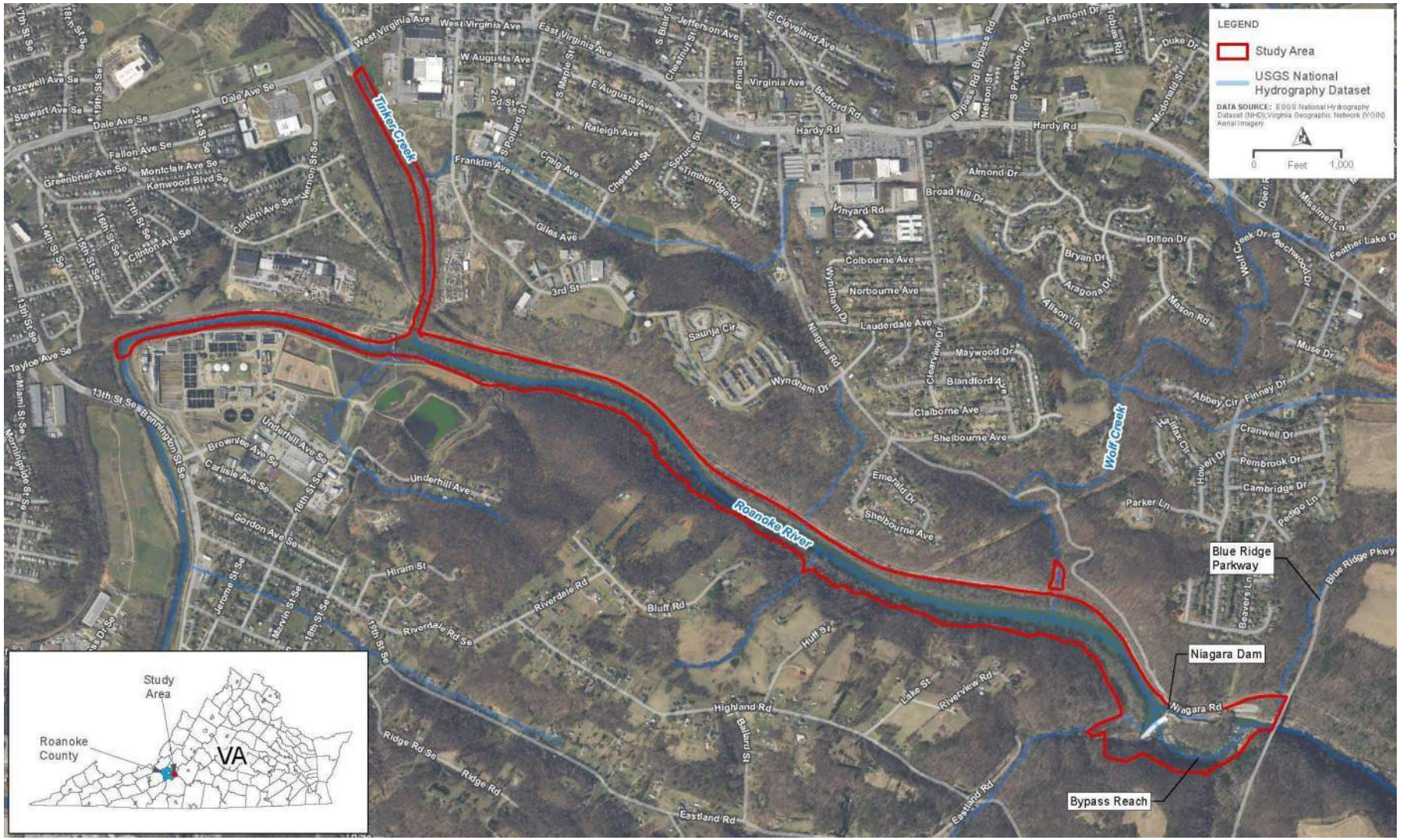

Shoreline Stability Assessment - Methods

Desktop Review

- ESRI Geographic Information System data, Virginia Geographic Information Network aerial photos, USGS topographic maps, and NRCS soil surveys to assess bank composition and erosion potential in the study area.

Field Survey (June 22, 2021)

- Bank stability and erosion potential for this study effort was analyzed using the modified Rosgen (2001) BEHI method and the West Virginia Department of Environmental Protection (WVDEP) complete BEHI procedure (WVDEP 2015).

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Shoreline Stability Assessment - Methods

BEHI Methodology:

- Assesses physical and geomorphic properties of the streambank to validate the probable sources of bank instability using stream bank variables.
- The metrics used to estimate BEHI include ratio of bank height to bankfull height (BH), ratio of root depth to bank height (RDH), root density percentage (RD), surface protection percentage (SP), and bank angle in degrees (BA).
- These metrics are associated with scores and are totaled to categorize the overall condition of the stream reach assessed.
- *Near Bank Stress was not evaluated and sediment loading was not calculated as part of this study.*

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Shoreline Stability Assessment

Description of Rosgen Metrics for BEHI Evaluation

- Ratio of bank height to bankfull height (BH) – Ratio of bank height to bankfull height. Common bankfull indicators in stable streams include top of bank, top of point bars, and other changes in channel slope. (e.g. top of bank height is 2 feet and bankfull height is 1.5 foot = 1.3)
- Ratio of root depth to bank height (RDH) – Ratio of the average plant root depth to the bank height as percent (e.g. root extending 2 feet into a 4 foot tall bank = 50%).
- Root density percentage (RD) – is the proportion of the streambank surface covered (and protected) by plant roots. (e.g. a bank whose slope is half covered with roots = 50%)
- Surface protection percentage (SP) – is the percentage of the stream bank covered by plant roots, downed logs, branches, rocks, etc.
- Bank angle in degrees (BA) – is the angle of the “lower bank” – the bank from the waterline at base flow to the top of bank, as opposed to benches that are higher on the floodplain. Bank angles greater than 90% occur on undercut banks.

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Shoreline Stability Assessment

Stream Characteristics used to develop BEHI and Ratings

BEHI Category	Bank height	BH Score	Root Depth	RDH Score	Root Density	RD Score	Surface Protection	SP Score	Bank Angle	BA Score	Total Score
V. low	1.0-1.1	1.45	90-100	1.45	80-100	1.45	80-100	1.45	0-20	1.45	≤7.25
Low	1.1-1.2	2.95	50-89	2.95	55-79	2.95	55-79	2.95	21-60	2.95	7.26-14.75
Moderate	1.3-1.5	4.95	30-49	4.95	30-54	4.95	30-54	4.95	61-80	4.95	14.76-24.75
High	1.6-2.0	6.95	15-29	6.95	15-29	6.95	15-29	6.95	81-90	6.95	24.76-34.75
V. high	2.1-2.8	8.5	5-14	8.5	5-14	8.5	10-14	8.5	91-119	8.5	34.76-42.50
Extreme	>2.8	10	<5	10	<5	10	<14	10	>119	10	42.51-50

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Shoreline Stability Assessment - Results

- Approximately 7 miles of Roanoke River Shoreline was assessed.
- Approximately 90% of shoreline was stable and did not exhibit active erosion.
- Banks with some level of visible erosion had higher bank height ratios, lack of root depth, limited surface protection, and moderate to high bank angles scores.
- No areas were categorized as having very high or extreme erosion potential.

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Shoreline Stability Assessment

BEHI Scores for Niagara Erosion Areas

Erosion Area	Length (linear ft)	Average of BH Score	Average of RDH Score	Average of RD Score	Average of SP Score	Average of BA Score	Average of Total Score by Category	Category
Erosion Area 1	103	2.95	4.95	4.95	4.95	6.95	24.75	Moderate
Erosion Area 2	45	4.95	4.95	2.95	2.95	8.5	24.3	Moderate
Erosion Area 3	28	1.45	2.95	2.95	6.95	6.95	21.25	Moderate
Erosion Area 4	21	2.95	4.95	4.95	6.95	4.95	24.75	Moderate
Erosion Area 5	107	4.95	1.45	1.45	1.45	8.5	17.8	Moderate
Erosion Area 6	98	2.95	1.45	1.45	1.45	8.5	15.8	Moderate
Erosion Area 7	56	4.95	2.95	4.95	2.95	4.95	20.75	Moderate
Erosion Area 8	72	2.95	2.95	1.45	1.45	4.95	13.75	Low
Erosion Area 9	358	2.95	2.95	4.95	4.95	4.95	20.75	Moderate
Erosion Area 10	128	4.95	8.5	6.95	6.95	4.95	32.3	High
Erosion Area 11	225	2.95	6.95	6.95	6.95	6.95	30.75	High
Erosion Area 12	326	4.95	2.95	6.95	6.95	4.95	26.75	High
Erosion Area 13	261	4.95	4.95	6.95	4.95	4.95	26.75	High
Erosion Area 14	336	2.95	2.95	4.95	4.95	4.95	20.75	Moderate
Erosion Area 15	209	2.95	2.95	4.95	6.95	2.95	20.75	Moderate
Erosion Area 16	176	4.95	6.95	8.5	6.95	6.95	34.3	High
Erosion Area 17	99	4.95	6.95	8.5	8.5	4.95	33.85	High
Erosion Area 18	272	4.95	4.95	4.95	6.95	4.95	26.75	High
Erosion Area 19	289	4.95	6.95	8.5	8.5	4.95	33.85	High

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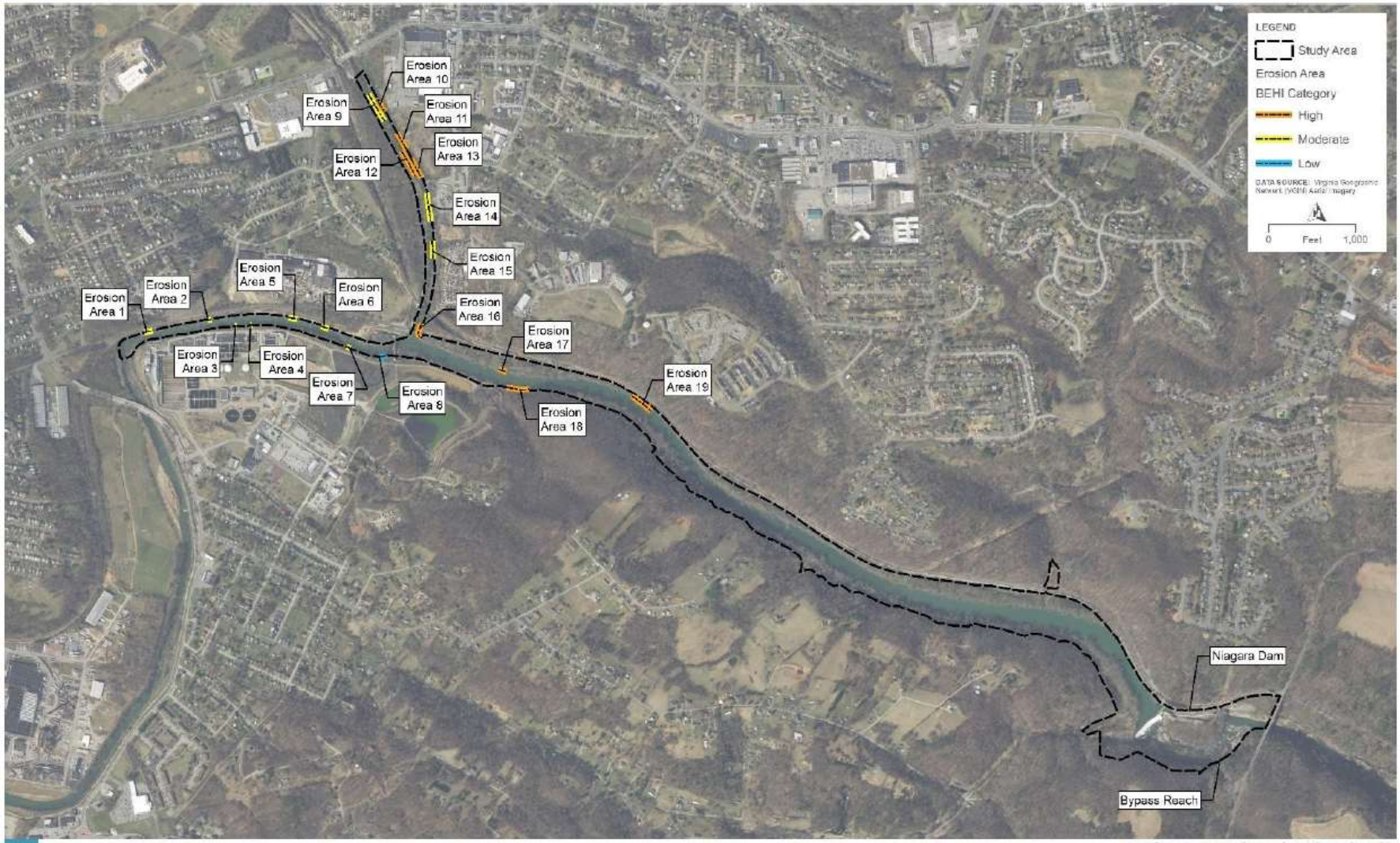
Shoreline Stability Results



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Shoreline Stability Assessment

Erosion Area 1: “Moderate”

Erosion Area 3: “Moderate”

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Shoreline Stability Assessment

Erosion Area 17: “High”

Erosion Area 19: “High”

Shoreline Stability Assessment

Summary and Discussion

- Overall, the visual inspection of the Project shoreline indicated stable banks and only localized streambank erosion. Approximately 90% of shoreline was stable and did not exhibit signs of active erosion.
- Existing bedrock and more established riparian buffers along the shorelines limit erosion potential.
- The main cause of bank/shoreline erosion in the Project include high concentration of impervious surface near Tinker Creek and the upstream portion of the project limits causing significant changes in water levels
- Areas of shoreline erosion are mainly concentrated in areas absent of vegetation or in areas susceptible to high flows during run-off events.

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Shoreline Stability Assessment

Summary and Discussion

- Did not identify any areas of active erosion upstream of Niagara dam, the trail race, or in the bypass reach.
- Erosion Areas 10-13, and 16-19 categorized as “high” are in the upstream reach of Tinker Creek and downstream of the confluence of Tinker Creek and the Roanoke River. These areas are most susceptible to high flows during storm events and subsequent potential accelerated erosion rates.
- Appalachian proposes to continue operating the Niagara development as currently operated, including run-of-river operations and maintenance of existing vegetation and buffer areas.
- Appalachian does not proposed remediation of any shoreline areas in the Project Boundary at this time.

Variances from FERC-approved Study Plan

The Shoreline Stability Assessment was conducted in conformance with the Commission's SPD.

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Wetlands, Riparian, and Littoral Habitat Study

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Wetlands, Riparian, and Littoral Habitat Study – Goals & Objectives

Study Goal: Conduct a study to identify and characterize the existing wetlands, waterbodies, and riparian and littoral vegetative habitats (including emergent and submergent aquatic vegetation beds).

Specific Objectives:

- Perform a desktop characterization using the USFWS National Wetlands Inventory (NWI), USGS National Hydrography Dataset (NHD), the VDEQ Wetland Conditional Assessment Tool (WetCAT), and other resources include GIS based topographic maps, hydrography, aerial imagery, and soil surveys to identify and describe, approximate, and classify wetlands and waterbodies within the study area.
- Perform a field verification to confirm the location of wetlands and waterbodies, dominant vegetative communities, and vegetation classifications identified in the desktop survey.
- Develop a GIS based map using the results of the desktop characterization and field verification to identify the locations of wetlands and waterbodies according to the Cowardin Classification System.
- The desktop and field verification was used to evaluate the potential for Project effects on wetlands, riparian, and littoral habitats within the study area.

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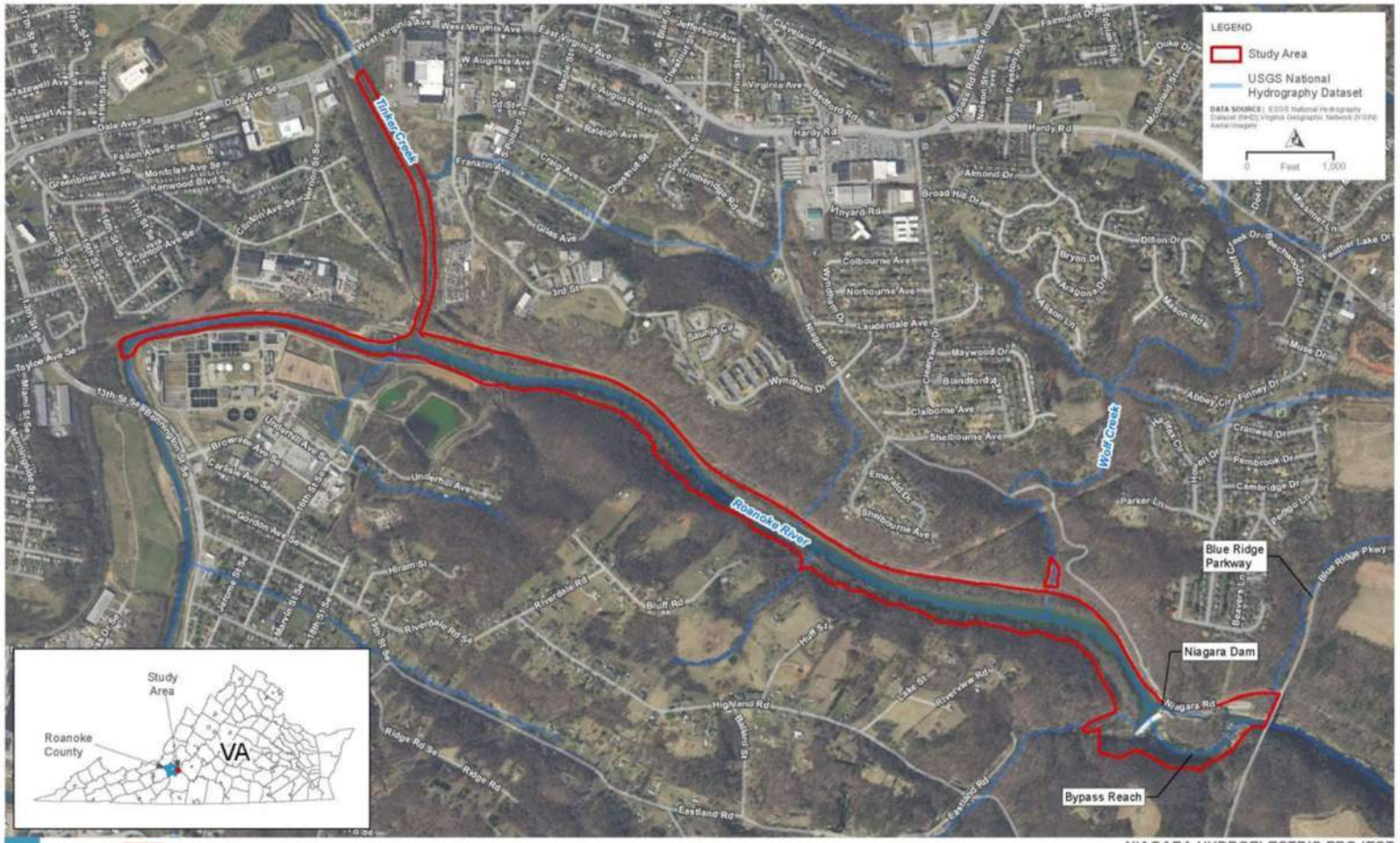

NIAGARA HYDROELECTRIC PROJECT
PROJECT VICINITY

WETLAND AND RIPARIAN HABITAT REPORT

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Study Methods

Desktop Study

- An initial desktop study was carried out to identify areas likely to contain wetlands, riparian, and littoral habitat and estimate the amount of each resource area.
  - USFWS NWI – estimated approximately 61.4 acres of wetlands and waterbodies (0.3 acres of palustrine forested; 0.9 acres of palustrine emergent, 25.9 acres of palustrine unconsolidated bottom; and 34.3 acres of riverine).
  - VDEQ WetCAT – identified two (2) somewhat severely stressed and one (1) severely stressed wetland based on habitat and water quality stressors associated with surrounding land use types.
- Data collected during the desktop survey including the USGS topographic maps and NHD, elevation data, high-resolution orthoimagery, and NRCS soils survey were used to create habitat characterization base maps that were used to facilitate the field verification efforts.

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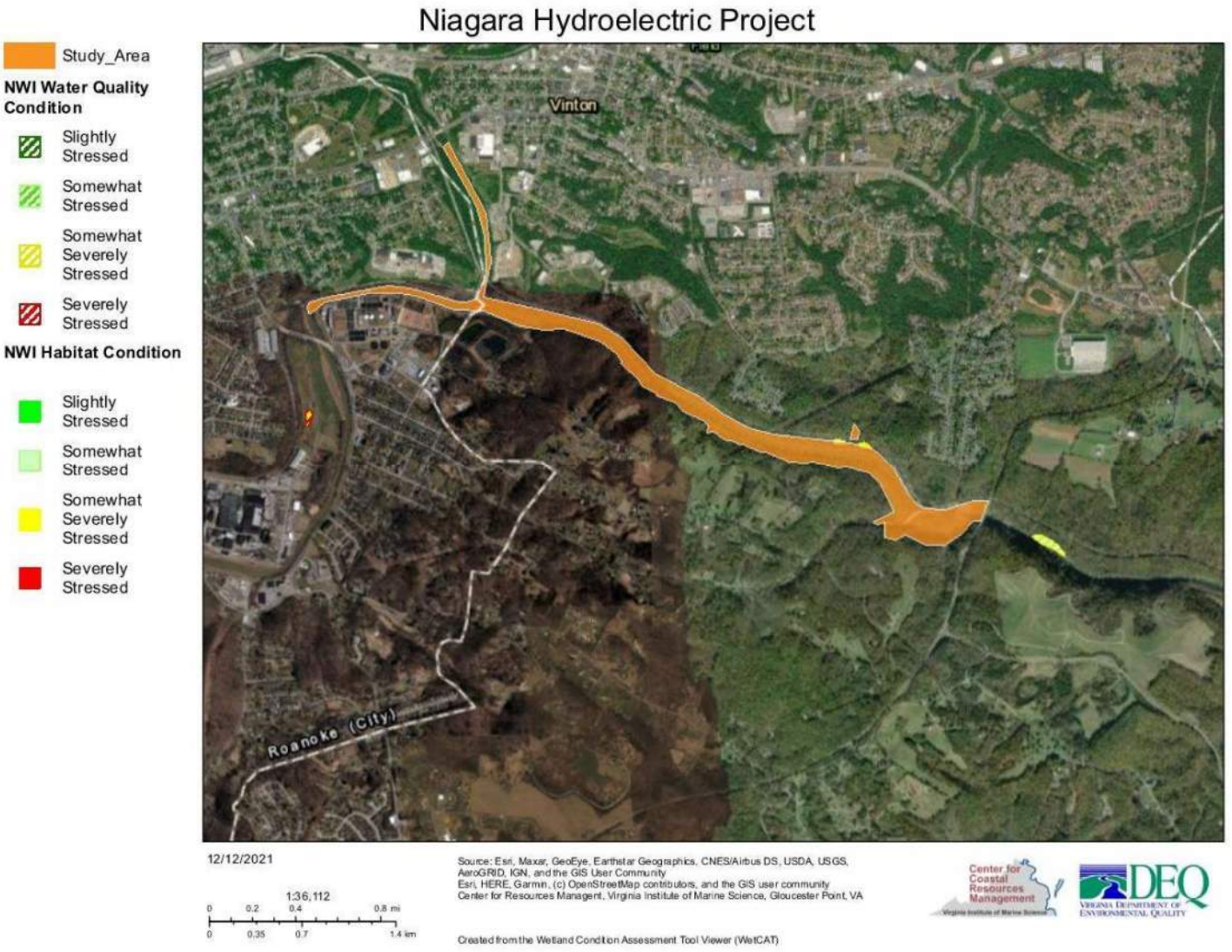
WetCAT Results

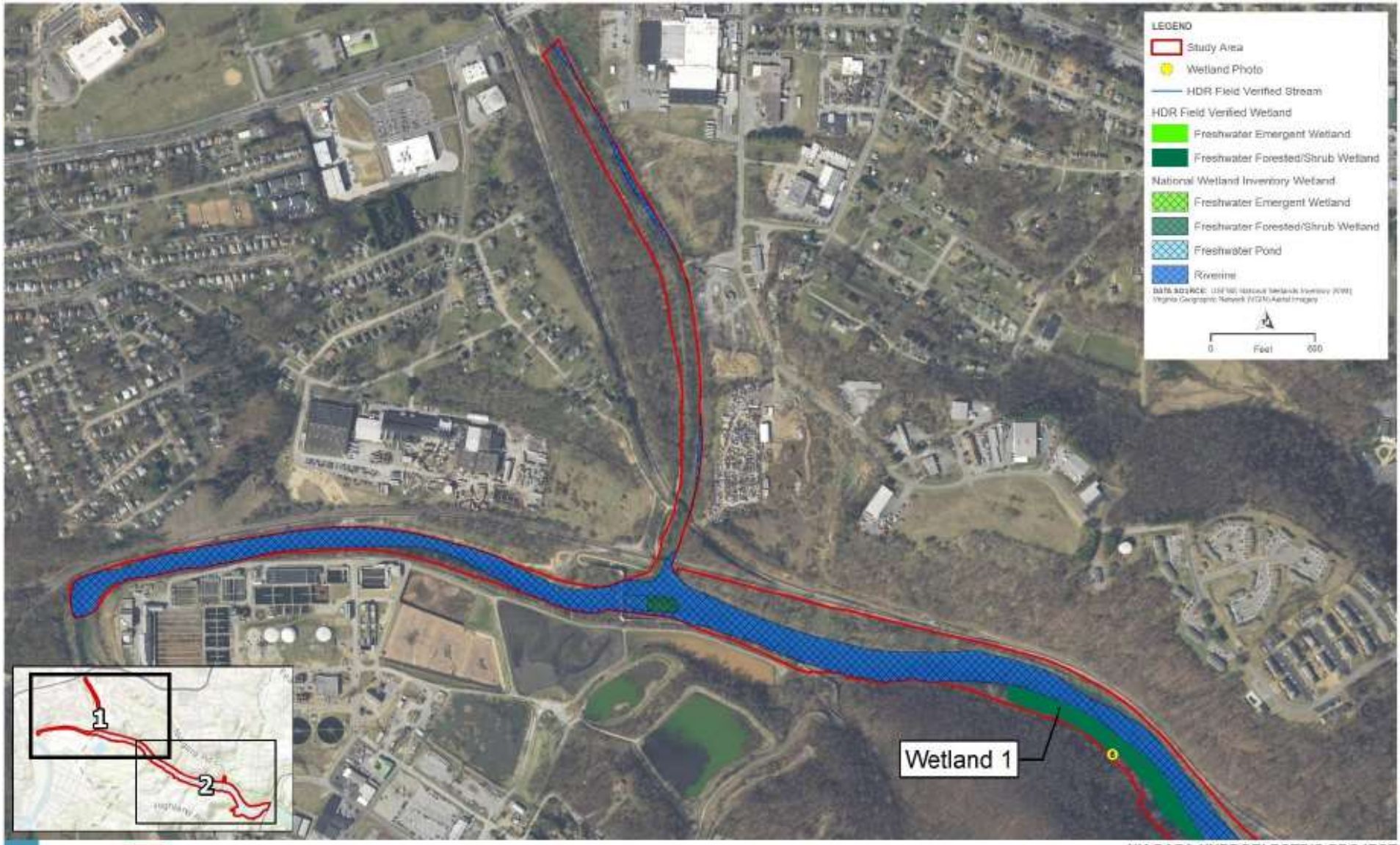


Study Methods

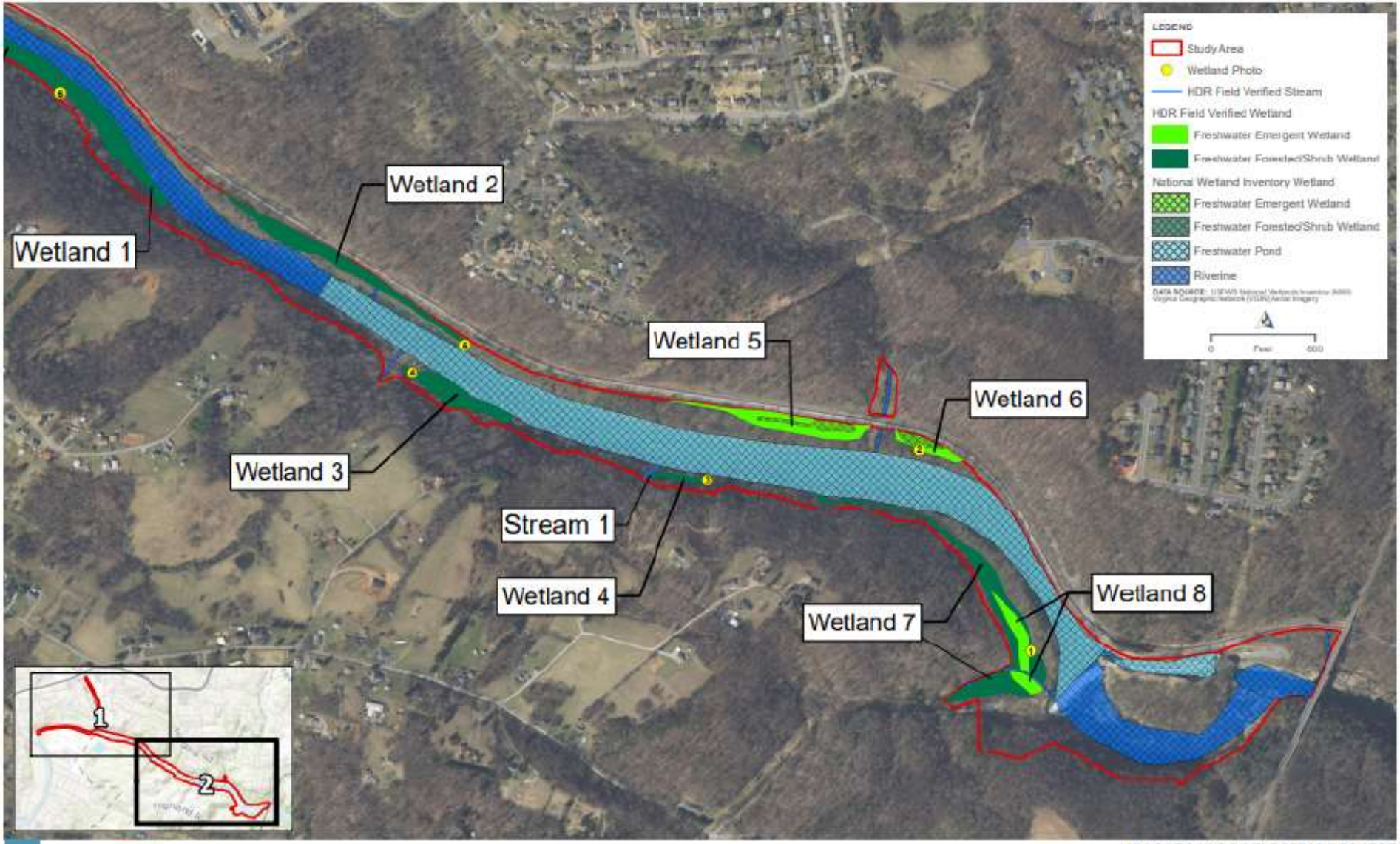
Field Verification

Wetlands and Waterbodies: June 22, 2021

- Wetland areas and streams identified in the desktop study were field-verified, but not formally delineated (i.e., no flagging or boundary marking), using the USACE Wetland Delineation Manual and Eastern Mountains and Piedmont Regional Supplement and USACE Regulatory Guidance OHWM Identification Guidance.
- Wetland scientists used handheld GPS units to estimate the boundaries of wetlands and waterbodies identified from the desktop survey as well as new surface waters not indicated on the desktop mapping.
- Identified waterbodies were photo-documented and USACE Wetland Determination Data Forms were completed.
- Data collected in the field was used to digitize the boundaries of existing wetland and waterbodies in GIS.



NIAGARA HYDROELECTRIC PROJECT
WETLAND AND RIPARIAN HABITAT
PAGE 1 OF 2



NIAGARA HYDROELECTRIC PROJECT
WETLAND AND RIPARIAN HABITAT

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Results – Wetlands and Waterbodies

- Approximately **12.4 acres of freshwater wetlands** were identified:
  - 2.4 acres of emergent wetlands
  - 10 acres of forested wetlands
- Approximately 125 linear feet of an intermittent tributary to the Roanoke River not illustrated on the on the USGS topographic quadrangles or National Hydrography Database and USFWS National Wetlands Inventory.

Results – Palustrine Forested Wetlands

- Located in higher floodplains and point bars of the Roanoke River.
- Dominant vegetation consisted of American sycamore, box elder, tulip poplar, black walnut, and silver maple.
- The majority of understory included Japanese stilt grass, jewel weed, false nettle, wood nettle and spice bush.
- Wetland hydrology indicators included soil saturation, high water tables, and areas of standing waters.
- Hydric soils indicators included depleted matrix and redox depressions.

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Results - Palustrine Emergent Wetlands

- Fringe wetlands location along the shoreline floodplains of the Roanoke River notably upstream of Niagara dam.
- Herbaceous species are dominant and included Japanese stilt grass, reed canary grass, smart weed, and false nettle.
- Wetland hydrology indicators included soil saturation, high water tables, and areas of standing water.
- Soils were mostly silt and clay and exhibited hydric soils indicators such as depleted matrix and depleted below dark surface.

Results - Palustrine Unconsolidated Bottom Waterbodies

- Permanently flooded habitats with less than 30% vegetative cover.
- Impounded section of the Roanoke River upstream of Niagara dam.
- Dominant vegetation includes algae and water willow.
- Characterized by the lack of stable surfaces for plant and animal attachment.
- Typically associated with limited wave and current activity.

Results - Riverine Habitats

- Riverine habitats in the study area include the Roanoke River and associated tributaries. The Roanoke River is a lower perennial riverine feature on the upstream and downstream limits of the study area but is classified as PUB in the middle section of the study area upstream of Niagara dam.
- There are several perennial tributaries that flow into the Roanoke River including Tinker Creek, Wolf Creek, and three unnamed tributaries.
- The dominant substrate included cobble to boulder sized rock along with bedrock.

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Study Methods

Field Verification

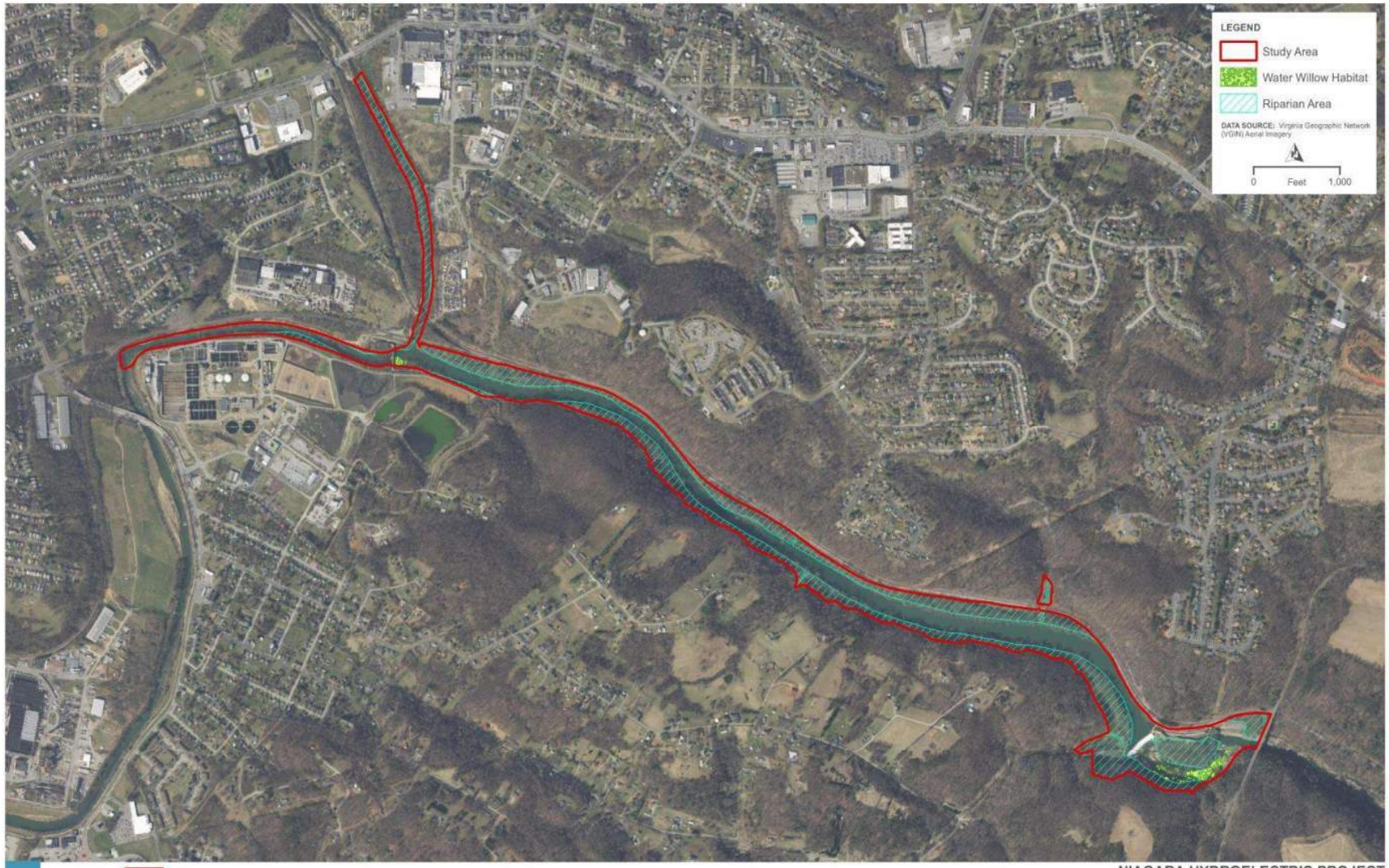
Riparian Zone: June 22, 2021

- Identification of vegetative community types by recording dominant species of vegetation at three strata (tree, sapling/shrub, and herb)
- HDR biologists used regional field guides and plant identification mobile apps to assist with identifying plans to genus and species level.
- Riparian zones identified within the study area best resembled Piedmont/Mountain Floodplain Forests and Swamps as described in the VDCR Natural Communities of Virginia Ecological Groups and Community Types.

Results – Riparian Habitats

The riparian area consists of approximately 65 acres and is mainly found along the shoreline, on islands, and within the bypass reach.

- Region is characteristic of the VDCR Piedmont/Mountain Floodplain Forest and Swamp community type.
- Dominant vegetation in the over story includes black walnut, black catalpa, elm, American sycamore, silver maple, box elder, green ash, and swamp white oak.
- The understory typically included white mulberry, pawpaw, and spice bush.
- The herbaceous vegetation consisted of jewelweed, Japanese stiltgrass, poison ivy, river oats, and wild geranium.
- Non-native invasive species were present and included Japanese knotweed, honeysuckle, Johnsongrass, and Tree of Heaven.



NIAGARA HYDROELECTRIC PROJECT

LITTORAL HABITAT AND RIPARIAN AREAS

FIGURE 3

Study Methods

Field Verification

Littoral Zone: June 23, 2021

- Defined as the shallow shoreline area of the Roanoke River along the stream bank and within shallow portions of the bypass reach. Includes instream and emergent and /or aquatic vegetation beds.
- A visual assessment was performed to characterize the availability of littoral zone aquatic habitats including emergent aquatic EAV and SAV beds within the bypass reach.
- Transect-based surveys were performed to characterize the availability of littoral zone aquatic habitats within the study area. Four transect lines oriented parallel to the shoreline were evaluated in the reservoir.

Results - Littoral Habitats

- No submerged aquatic vegetation were collected in the four transects located in the reservoir.
- The bypass reach consisted of angular bed rock and depositional bars of sand and organic material. Pools of surface water were present with patchy vegetation growth in areas that were above water level.
- Water willow beds were mapped in the bypass reach and located in low-flow pools close the to the banks and between the rocky outcropping.
- Littoral zone vegetation also included various terrestrial plants, and algae, with water willow being by far the most abundant EAV.
- Algae was sparse in the bypass reach and was primarily located in stagnant pools along the banks with low amounts of daily sunlight.

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Results - Littoral Habitats

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- Wildlife species observed during the Niagara field study effort

Common Name	Latin Name
Birds	
Turkey vulture	*Cathartes aura*
Canada goose	*Branta canadensis*
Red-tailed hawk	*Buteo jamaicensis*
Killdeer	*Charadrius vociferus*
Mourning dove	*Zenaida macroura*
Belted kingfisher	*Ceryle alcyon*
Blue jay	*Cyanocitta cristata*
American crow	*Corvus brachyrhynchos*
American robin	*Turdus migratorius*
Northern mockingbird	*Mimus polyglottos*
Northern cardinal	*Cardinalis cardinalis*
Great blue heron	*Ardea herodias*
Osprey	*Pandion haliaetus*
Wood duck	*Aix sponsa*
Mammals	
White-tailed deer	*Odocoileus virginianus*
Muskrat	*Ondatra zibethicus*
Gray squirrel	*Sciurus carolinensis*
River Otter	*Lontra canadensis*
Beaver	*Castor canadensis*
Amphibians	
Eastern newt	*Notophthalmus viridescens*
American toad	*Anaxyrus americanus*
Spring peeper	*Pseudacris crucifer*
American bullfrog	*Lithobates catesbeiana*
Green frog	*Lithobates clamitans*
Wood frog	*Lithobates sylvaticus*
Reptiles	
Snapping Turtle	*Chelydra serpentina*
Copperhead	*Agkistrodon contortrix*

Wetland, Riparian, and Littoral Habitat Study – Project Impacts

- Wetland, riparian, and littoral habitats at the Project are reflective of current Project operations.
- Seasonal drawdowns may result in temporary short-term impacts to wetlands identified immediately upstream of Niagara Dam but are not anticipated to result in long term adverse impacts or loss of wetlands.
- Sediment accumulation is slowly occurring at locations within and around the impoundment and in some cases this can lead to the creation of new wetlands.
- There are no plans for improvement projects that would require disturbance of wetlands or tree clearing activities.
- Operations and maintenance of the Project are not anticipated to have any long-term adverse impacts on wetland, riparian, and littoral resources.

Variances from FERC-approved Study Plan

The Wetlands, Riparian, and Littoral Habitat Study was conducted in conformance with the Commission's SPD.

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Cultural Resources Study

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Cultural Resources Study

Study Status

Tasks completed for the Cultural Resources Study:

1. Consultation for the Area of Potential Effects (APE) Determination
2. Background Research and Archival Review of the Study Area
3. Phase I Reconnaissance Survey of the APE
4. Inventory of Traditional Cultural Properties (TCPs)
   - No TCPs identified
5. Consulting with agencies to determine if a Historic Properties Management Plan (HPMP)
   - Not necessary for the Project

Cultural Resources Study

APE Consultation

On September 1, 2020, Terracon consulted with the SHPO and applicable tribes requesting concurrence on the Project's APE.

APE responses were received from:

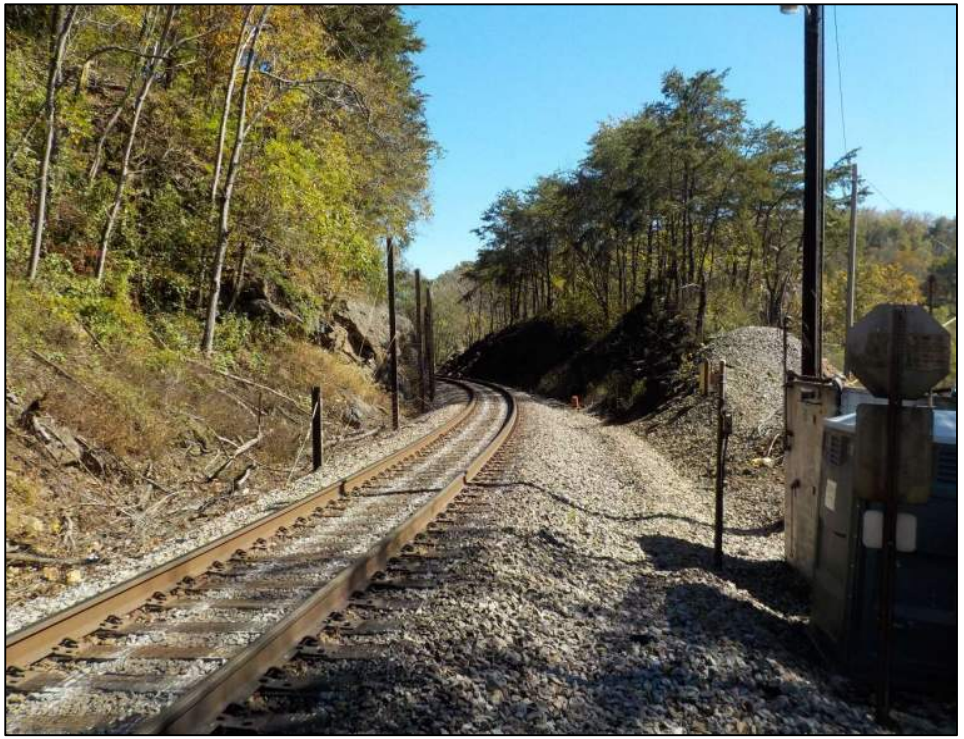
- The Catawba Indian Nation
- The Virginia DHR/SHPO
- The Pamunkey Indian Tribe
- The Monacan Indian Nation
- The Delaware Nation

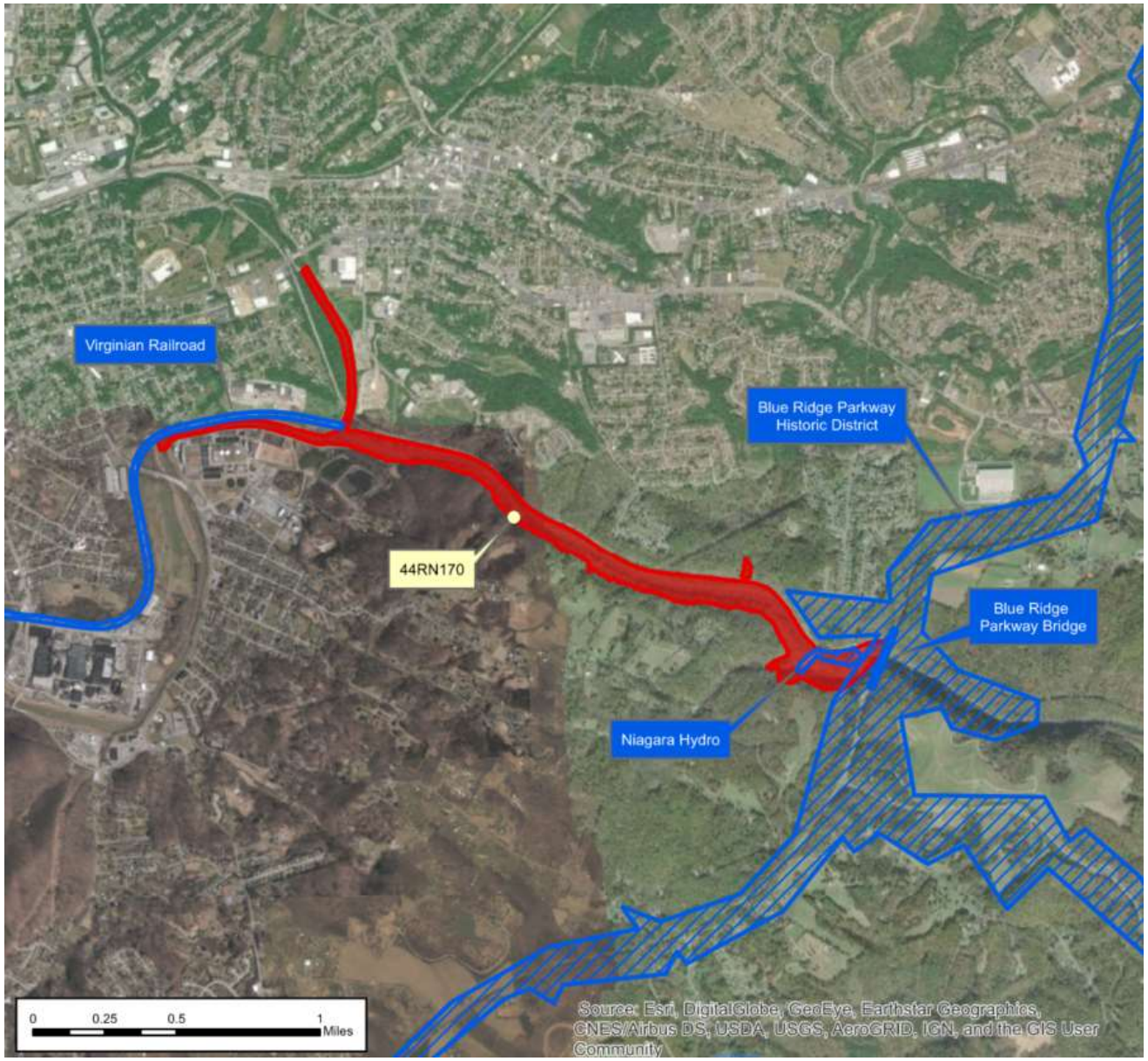
Cultural Resources Study Findings

- Terracon conducted an archaeological assessment of the Project APE in October 2020 and geomorphological investigations in April 2021.
- Based on the field studies, the APE was determined to have no potential for containing intact archaeological resources.
  - One previously recorded archaeological site that is within or immediately adjacent to the APE (44RN170) was thought to be a potential prehistoric rockshelter. However, the potential shelter was found to contain historic alluvial deposits down to bedrock with no chance of containing intact archaeological remains.

Cultural Resources Study Findings

- Three aboveground historic properties, the Blue Ridge Parkway Historic District, the Blue Ridge Parkway Bridge, and the Virginian Railway, are within the APE.
- No historic properties are currently being adversely affected by the Project.




Virginian Railroad
Blue Ridge Parkway Historic District
44RN170
Blue Ridge Parkway Bridge
Niagara Hydro
0
0.25
0.5
1
Miles
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Variances from FERC-approved Study Plan

- The Cultural Resources Study was conducted in conformance with the Commission's SPD.
- The final Study Report was filed with the Draft License Application on October 1, 2021 and is not included in the USR (PRIV).
- Since there are no historic properties in the APE being affected, a HPMP will not be necessary.

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Morning Break

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Recreation Study

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Recreation Study

Study Goal: to determine the need for enhancement to the existing recreation facility, or the need for additional recreational facilities, to support the current and future demand for public recreation in the Study Area.

Existing Project and Non-Project facilities:

- Project Canoe Portage Trail (Project Facility) includes a take-out and put-in below the Niagara dam.
- Tinker Creek Canoe Launch (Non-Project Facility) is upstream of the Niagara dam.
- The Roanoke River Trail (Non-Project Facility) includes a short-inclined trail and access to fishing in the bypass reach.
- Rutrough Point (Non-Project Facility) is 3 river miles downstream from the Niagara dam.

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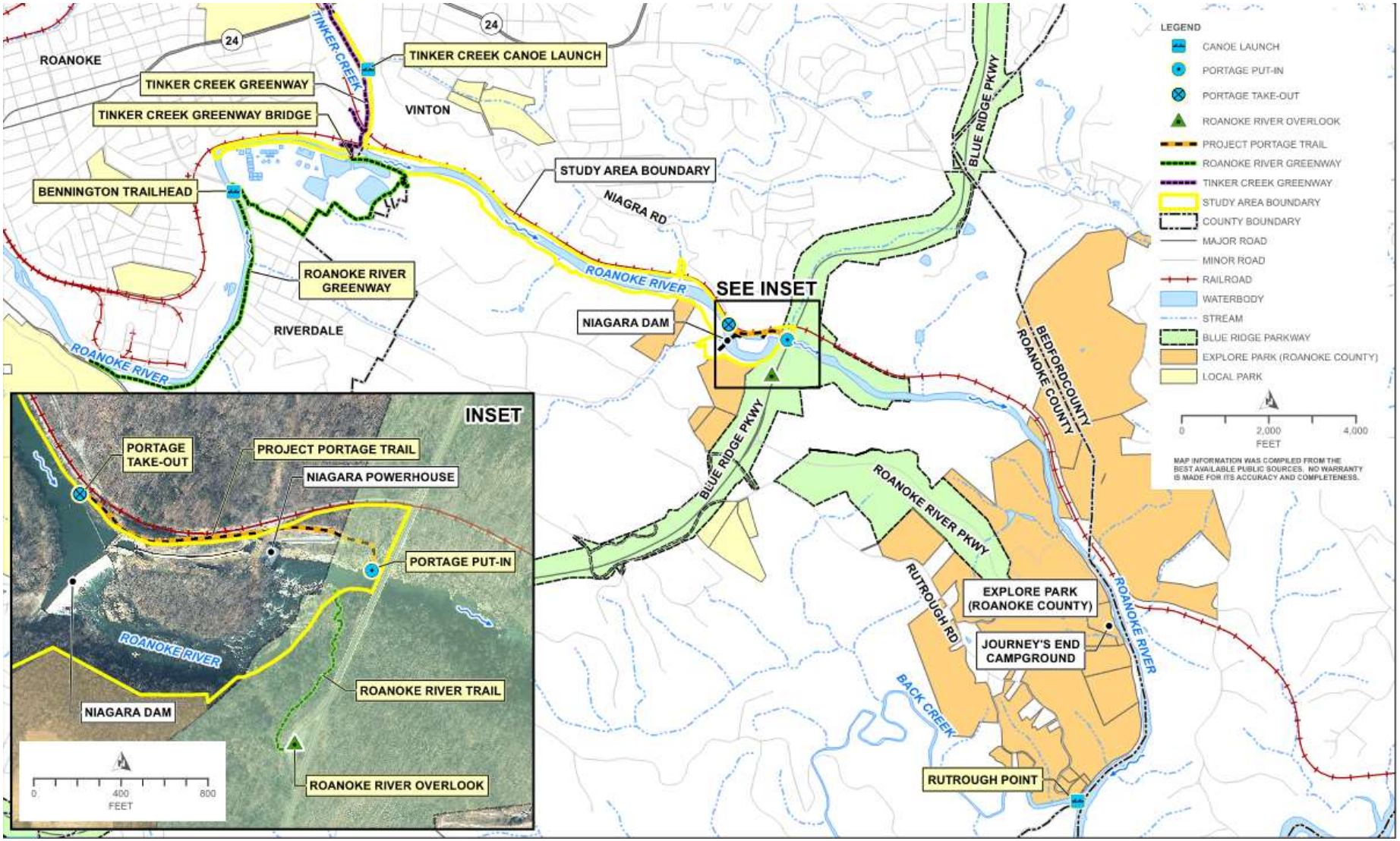

Recreation Study

Recreation Study tasks included:

- Recreation Facility Inventory and Condition Assessment
  - Completed in 2020
- Aesthetic Flow Documentation
  - Completed in 2020
- Recreational Flow Release Desktop Evaluation
  - Completed in 2020
- Existing and Future Recreational Opportunities
- Recreation Visitor Use Online Survey
- Recreational Use Documentation

Recreation Study: Existing and Future Recreational Opportunities

- Appalachian convened a virtual meeting on April 20, 2021 with interested relicensing participants. The goal was to have a focused discussion of existing and future recreational opportunities at or associated with the Project.
- Presentations were given on behalf of Appalachian, Roanoke County, Roanoke Valley Greenway Commission, and Roanoke River Blueway Committee.
- Discussions regarding potential conceptual level recreation enhancements and improvements to the canoe portage trail and other areas of the Project occurred.

Recreation Study: Online Survey

Summary of Study Methods

- Provides a method for existing and potential recreation visitors to the Study Area to respond and provide feedback on recreation opportunities on Project and Non-Project facilities.
- Outreach methods included: posted signs, coordinated with stakeholders, included in ILP Progress Report, and social media.
- From April 21, 2020 to October 27, 2021, Appalachian received 119 responses to the online survey.

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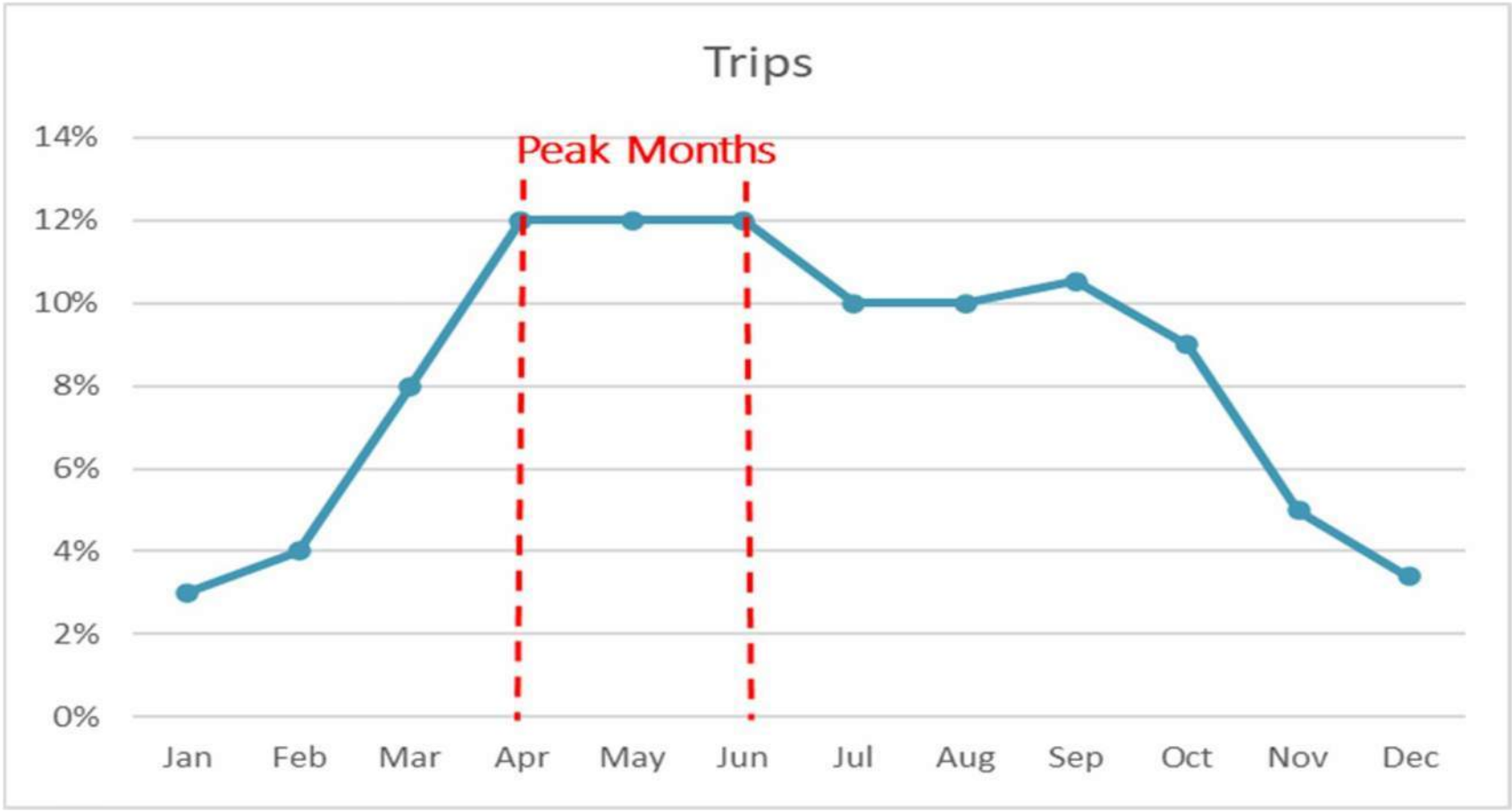
Monthly Recreation Activity for Project and Non-Project Facilities



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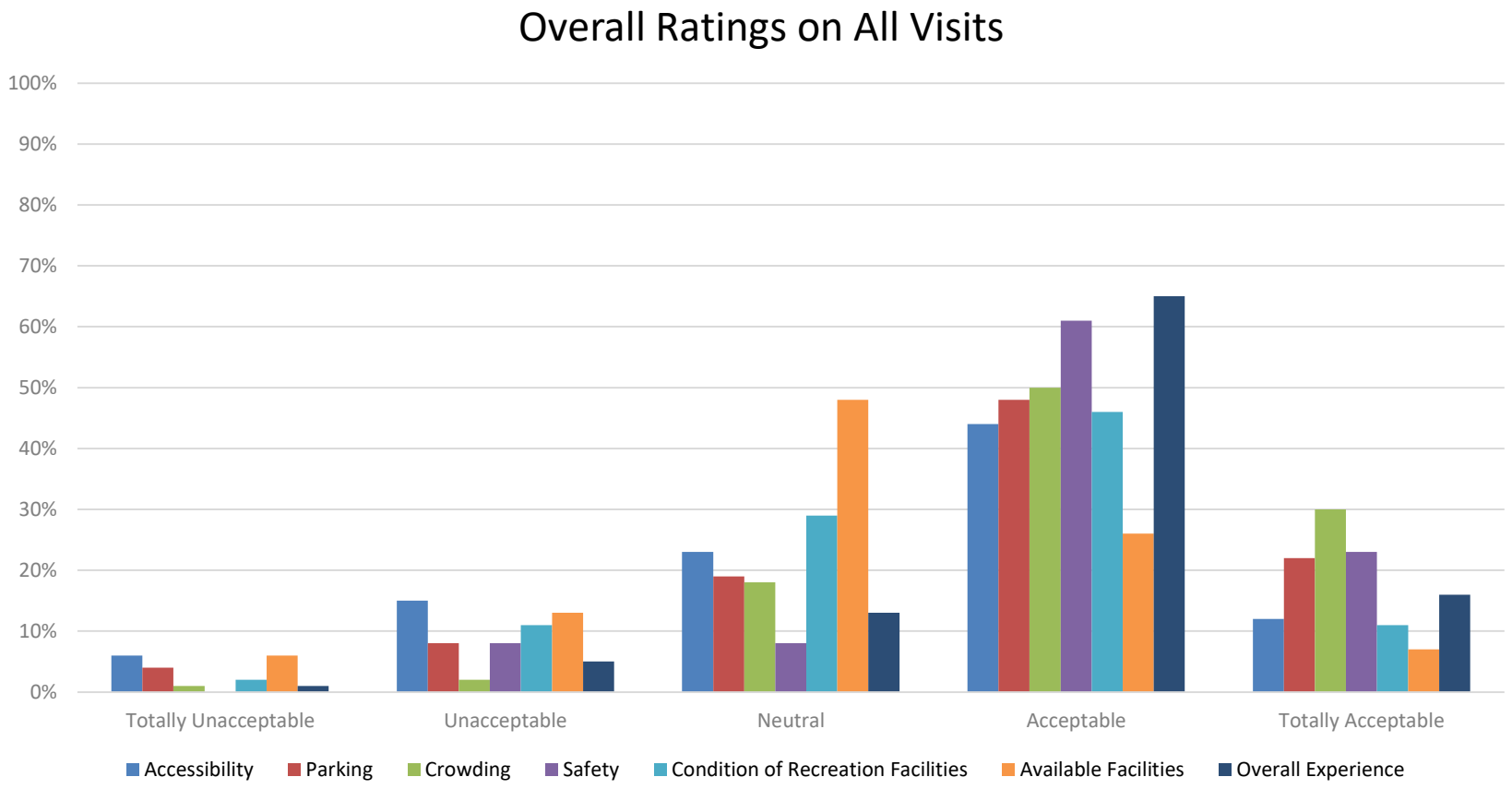
Summary for Primary Recreation Activities at all Project and Non-Project Facilities

Primary Activity	Percent (%)
Canoeing/kayaking/SUP	65
Fishing	17
Hiking	8
Pleasure boating/Tubing/Wake Surfing	3
Sight-seeing/Wildlife Viewing	3
Swimming	2
Picnicking	1
Running	1

Online Survey Summary for Overall Rating on All Visits at Project and Non-Project Facilities



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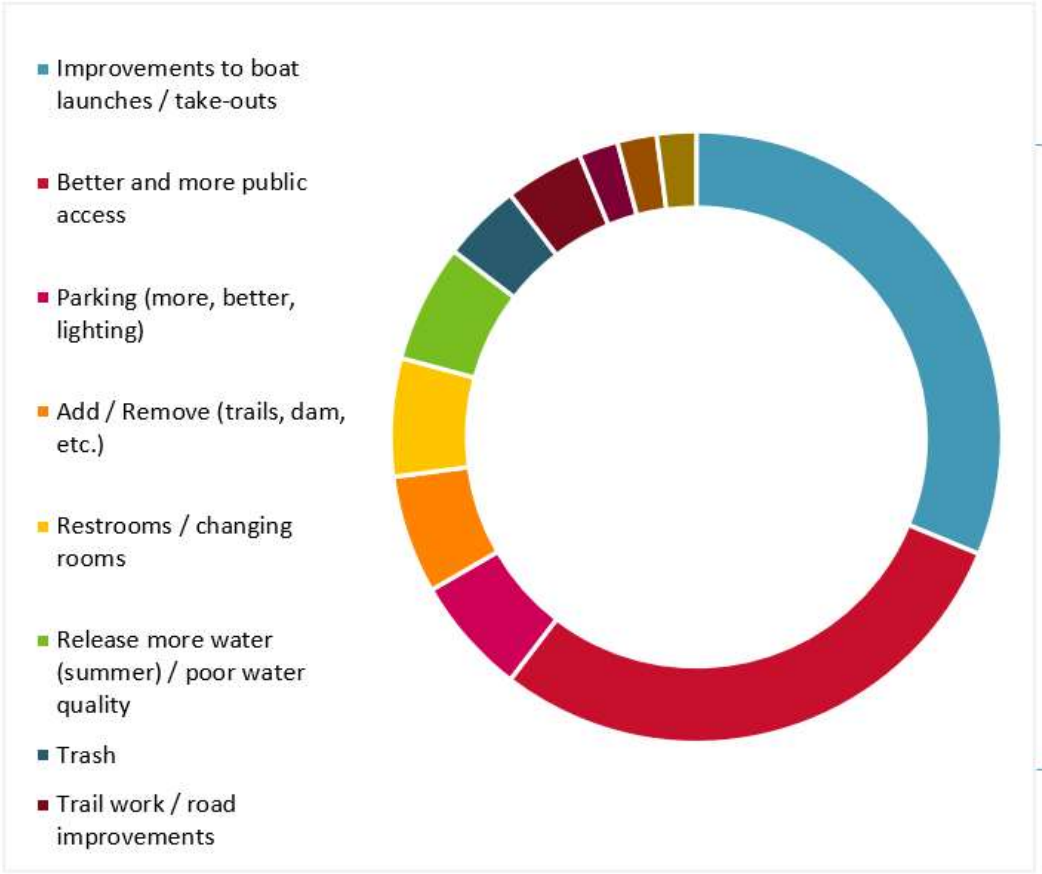
Niagara Canoe Portage Trail: Suggested Improvement Online Responses



Improvement Suggestions	#
Improvements to boat launches / take-outs	15
Better and more public access	14
Parking (more, better, lighting)	3
Add / Remove (trails, dam, etc.)	3
Restrooms / changing rooms	2
Release more water (summer) / poor water quality	2
Trash	2
Trail work / road improvements	2
Signage & wayfinding	1
Access to water release schedule	1
More attractions	1

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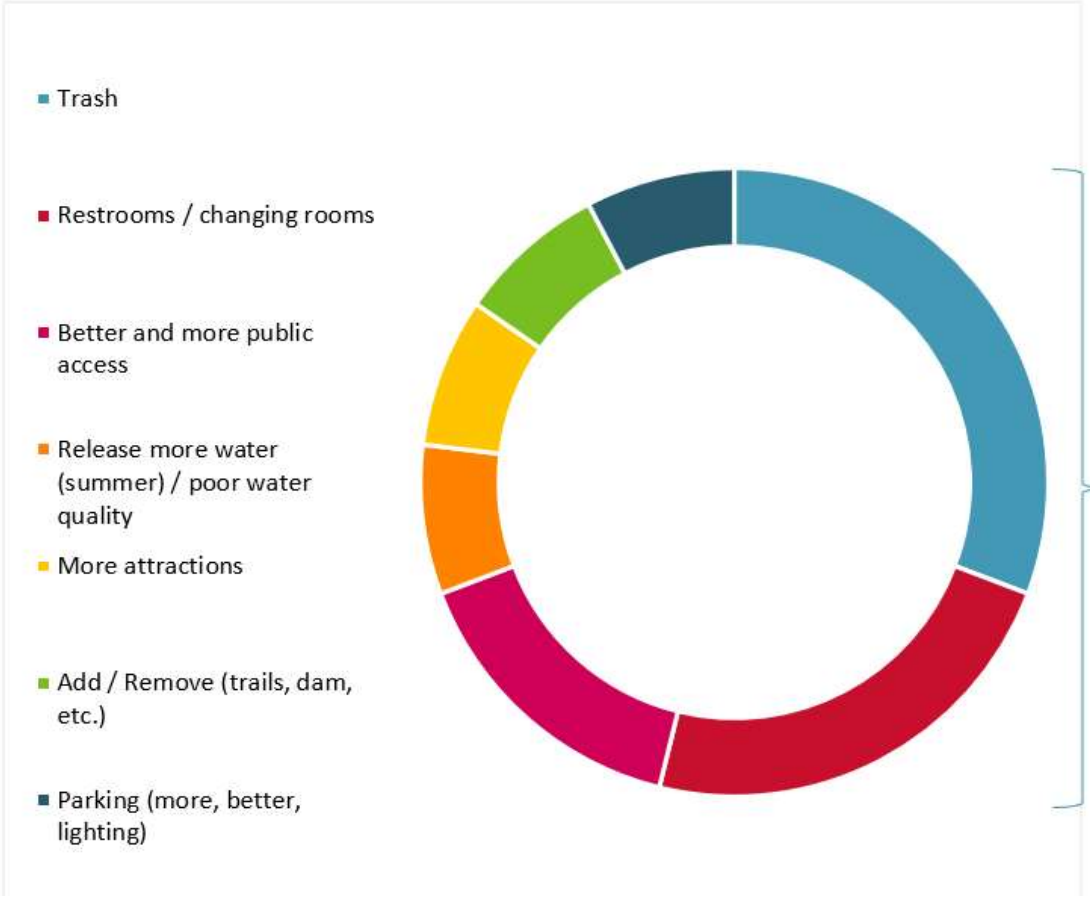
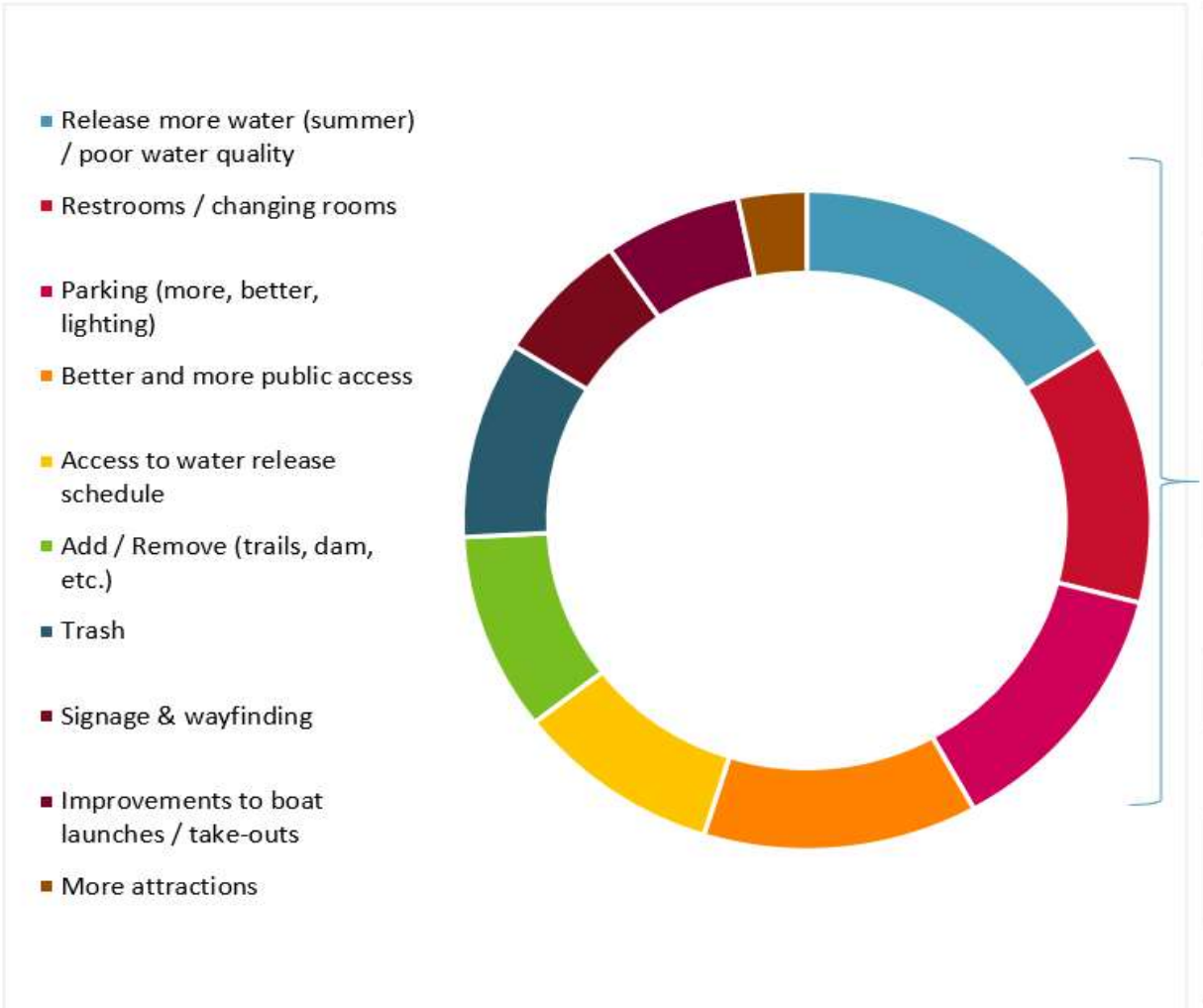
Tinker Creek Canoe Launch: Suggested Improvement Online Responses



Improvement Suggestions	#
Trash	4
Restrooms / changing rooms	3
Better and more public access	2
Release more water (summer) / poor water quality	1
More attractions	1
Add / Remove (trails, dam, etc.)	1
Parking (more, better, lighting)	1

Roanoke River Trail/Overlook: Suggested Improvement Online Responses



Improvement Suggestions	#
Release more water (summer) / poor water quality	5
Restrooms / changing rooms	4
Parking (more, better, lighting)	4
Better and more public access	4
Access to water release schedule	3
Add / Remove (trails, dam, etc.)	3
Trash	3
Signage & wayfinding	2
Improvements to boat launches / take-outs	2
More attractions	1

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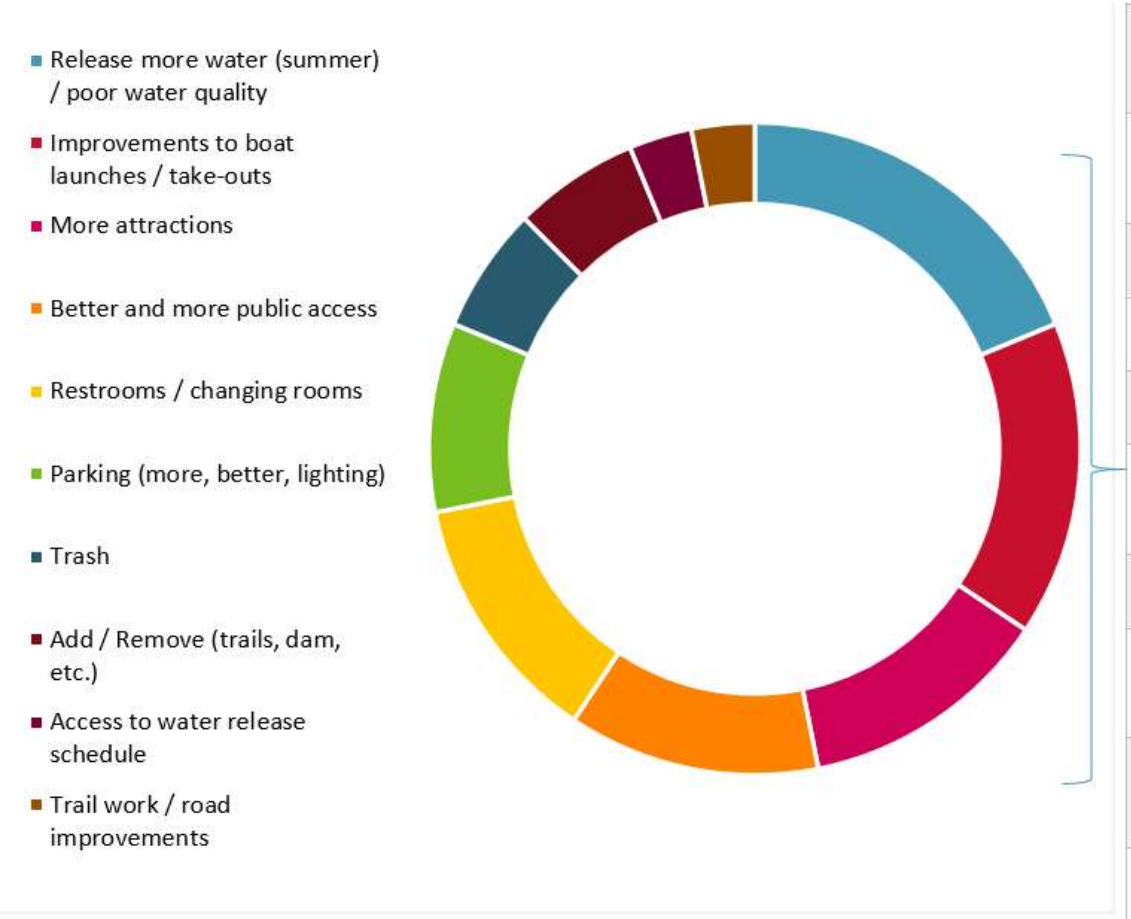
Rutrough Point: Suggested Improvement Online Responses



Release more water (summer) / poor water quality	6
Improvements to boat launches / take-outs	5
More attractions	4
Better and more public access	4
Restrooms / changing rooms	4
Parking (more, better, lighting)	2
Trash	2
Add / Remove (trails, dam, etc.)	2
Access to water release schedule	1
Trail work / road improvements	1

Recreation Use Documentation Methods

- Visitor use data was obtained in 2021 at the Non-Project recreation facilities through a combination of in-person surveys and field reconnaissance during the prime recreational months (May-October).
- National Park Service planned work on the bridge over the Roanoke River which resulted in closure of the Blue Ridge Parkway from Route 24 to the entrance to Explore Park as well as the closure of the Roanoke River Trail and associated parking area.
  - In-person monitoring was performed at the Roanoke River Trail earlier in the year to obtain as much data as possible.
- After the closure of the bridge, the Roanoke River Trail could not be surveyed any longer. AEP installed a trail camera at the Niagara Portage put-in to document usage in lieu of in-person surveys.

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2020 Recreation Use Documentation

Recreation Site	Date	Time	Vehicles	Parking Spaces	Percentage	Activities
Rutrough Point						
	25-May	11:15 AM	5	12	42%	Two people fishing. High river flows.
	3-Jul	9:45 AM	6	12	50%	One kayak launching. Two people fishing.
	5-Sep	11:15 AM	4	12	33%	One canoe launching.
	26-Sep	3:40 PM	2	12	17%	Two pontoon boats on river. Three people bank fishing.
Tinker Creek						
	25-May	11:35 AM	0	5	0%	Ramp closed due to high water.
	3-Jul	10:15 AM	3	5	60%	No activity.
	5-Sep	12:30 PM	0	5	0%	No activity.
	26-Sep	4:40 PM	2	5	40%	One vehicle with trailer waiting for canoes/kayaks.
Roanoke River Trail						
	1-Jan	9:30 AM	2	35	6%	No activity.
	7-Feb	11:45 AM	0	35	0%	No activity.
	2-Mar	12:45 PM	1	35	3%	Two people hiking.
	25-Mar	12:00 PM	5	35	14%	Two people hiking; two people bank fishing.
	1-May	10:45 AM	3	35	9%	Four people hiking.
	25-May					Closed due to road conditions.
	3-Jul					Closed due to road conditions.
	5-Sep	11:45 AM	4	35	11%	One person bank fishing.
	26-Sep	3:50 PM	10	35	29%	Two people viewing spillway; five people hiking.

2021 In-Person Surveys

Roanoke River Trail/Overlook Dates:

- March 20
- March 29
- April 10
- April 12
- April 24
- May 1*
- May 11*

Tinker Creek Canoe Launch and Rutrough Point Dates:

- May 1*
- May 11*
- May 31 (holiday weekend)
- June 7
- June 19
- July 3 (holiday weekend)
- July 23
- August 14
- August 19
- September 5 (holiday weekend)
- September 24
- October 2
- October 4

Recreation Use Documentation: Niagara Portage Trail

- A motion-activated trail camera was installed from May 26, 2021 through October 27, 2021 at the Project Facility
- Recorded time, date, temperature and recreation activity

Recreation Use Documentation: Niagara Portage Trail

- June through August were the most popular months for recreational activity to occur.
- Activities observed included: Non-motorized boating activity (i.e. kayaks, canoes), bank fishing, and observation of the facility and river

Table 4.19: Trail Camera Primary Recreation and Usage Counts

Primary Recreation Activity(s) Observed	Highest Visitor Count (Month)	Total Visitor Count
Bank Fishing	7 (July)	28
Canoe/Kayak	9 (June)	21
Observation	8 (August)	21

Recreation Use Documentation: Tinker Creek Canoe Launch

- Primary activities included launching boats for fishing, and canoes and kayaks for paddling along Tinker Creek and the reservoir for the Niagara.
- Individuals utilize the facilities provided at the Tinker Creek Canoe Launch each month of the year with the higher percentage of visits occurring during the months of April through October.
- Those interviewed demonstrated their satisfaction with the facilities provided.
- Comments received included concerns with (1) crowding, (2) need for better signage and (3) a desire for improved connectivity between the portions of the Greenways along the Roanoke River and the river to increase in-water and shoreline fishing opportunities.
- None of the individuals interviewed stated that they continued downstream of the Project spillway by utilizing the Niagara Canoe Portage Trail or removed their boat from the water at another location.

Recreation Use Documentation: Roanoke River Trail/Overlook

- Primary activities included hiking, viewing, and bank fishing.
- Individuals visiting the Roanoke River Trail do so the entire year with most of the visits occurring during the months March through September.
- Most visits were of short duration during which a break could be taken from traveling along the Blue Ridge Parkway.
- Approximately 25 to 35 percent of users were from outside the Roanoke area.
- There were no observations of activities related to kayaking.

Recreation Use Documentation: Rutrough Point

- Primary activities bank fishing followed by kayaking and canoeing.
- Utilized extensively with the highest percentage of users visiting from April through September.
- Many of those visiting Rutrough Point either fish from the open area near the kayak/canoe launch or the riverbank upstream toward Explore Park.
- Users reported the facility as satisfactory. Items of concern include crowding and the condition of some of the amenities.

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Recreation Study Summary

- The Roanoke River is a significant recreation and amenity resource for the Roanoke Valley providing numerous and varied opportunities for those residing in the area as well as those visiting from outside including canoeing, kayaking, fishing, tubing, wading, wildlife viewing, and watershed education.
- Recreation facilities in the vicinity of the Niagara Project are utilized each month of the year with most activities taking place from April through October.
- Users appear to be quite satisfied with the facilities provided with the exception of the canoe portage. However, users are recreating at the Project facility more than anticipated.

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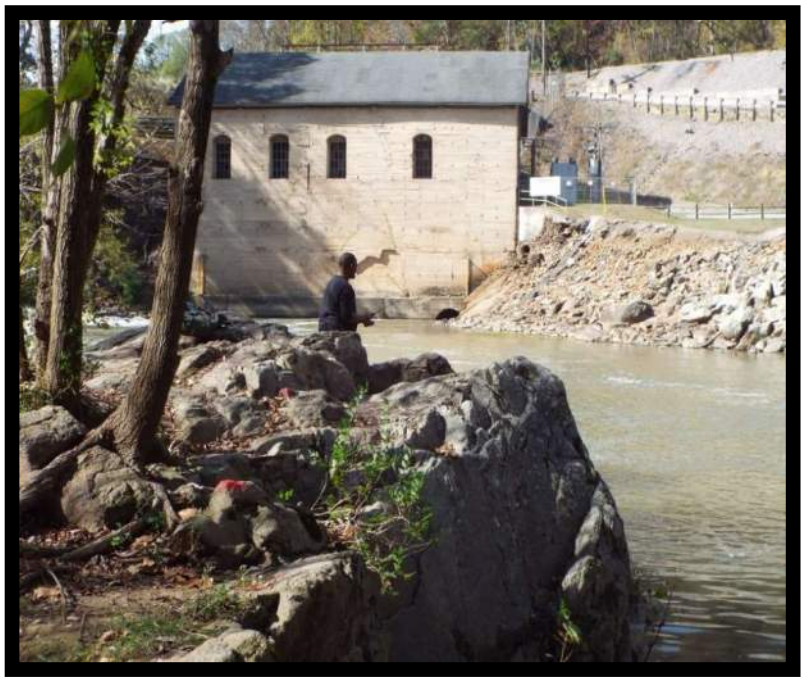
Recreation Study Summary

- Efforts to improve the canoe portage could include:
  - (1) improvements to the existing take-out and put-in locations;
  - (2) improved signage directing canoeists and kayakers to the take-out and put-in locations and along the portage trail itself;
  - (3) a mechanism to assist those utilizing the portage with transporting canoes and kayaks; and
  - (4) an education program informing the public of the availability of the portage and that the reservoir is open to use by all for recreation.

Variances from FERC-approved Study Plan

The Recreation Study was conducted in conformance with the Commission's SPD.

Appalachian plans to develop a draft **Recreation Management Plan** for the Project, in consultation with agencies and other recreation stakeholders, to guide development and maintenance of recreation facilities and opportunities at the Project over the new license term.



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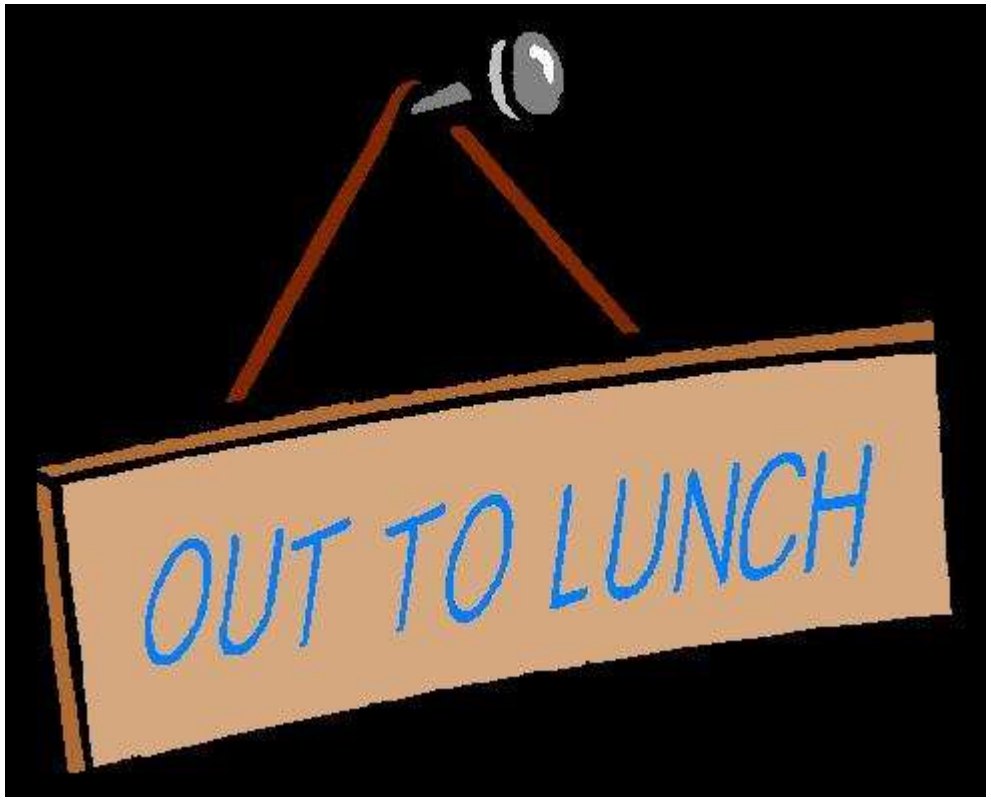
Lunch Break



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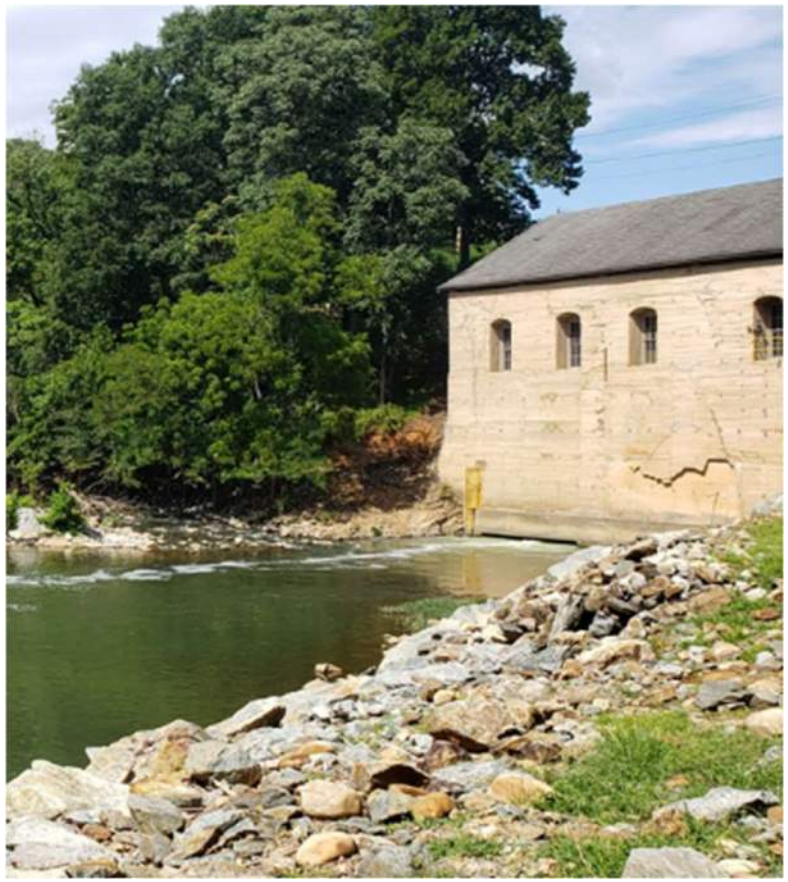
Fish Community Study



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Fish Community Study

- **Study Goal:** Obtain current information on the fish community in the Roanoke River in the vicinity of the Project to support an analysis of Project effects
- **Study Components:**
  - 2020 Fish Community Survey – Presented in ISR
  - 2021 Roanoke Logperch Survey
  - Impingement and Entrainment Study

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2021 Roanoke Logperch Survey

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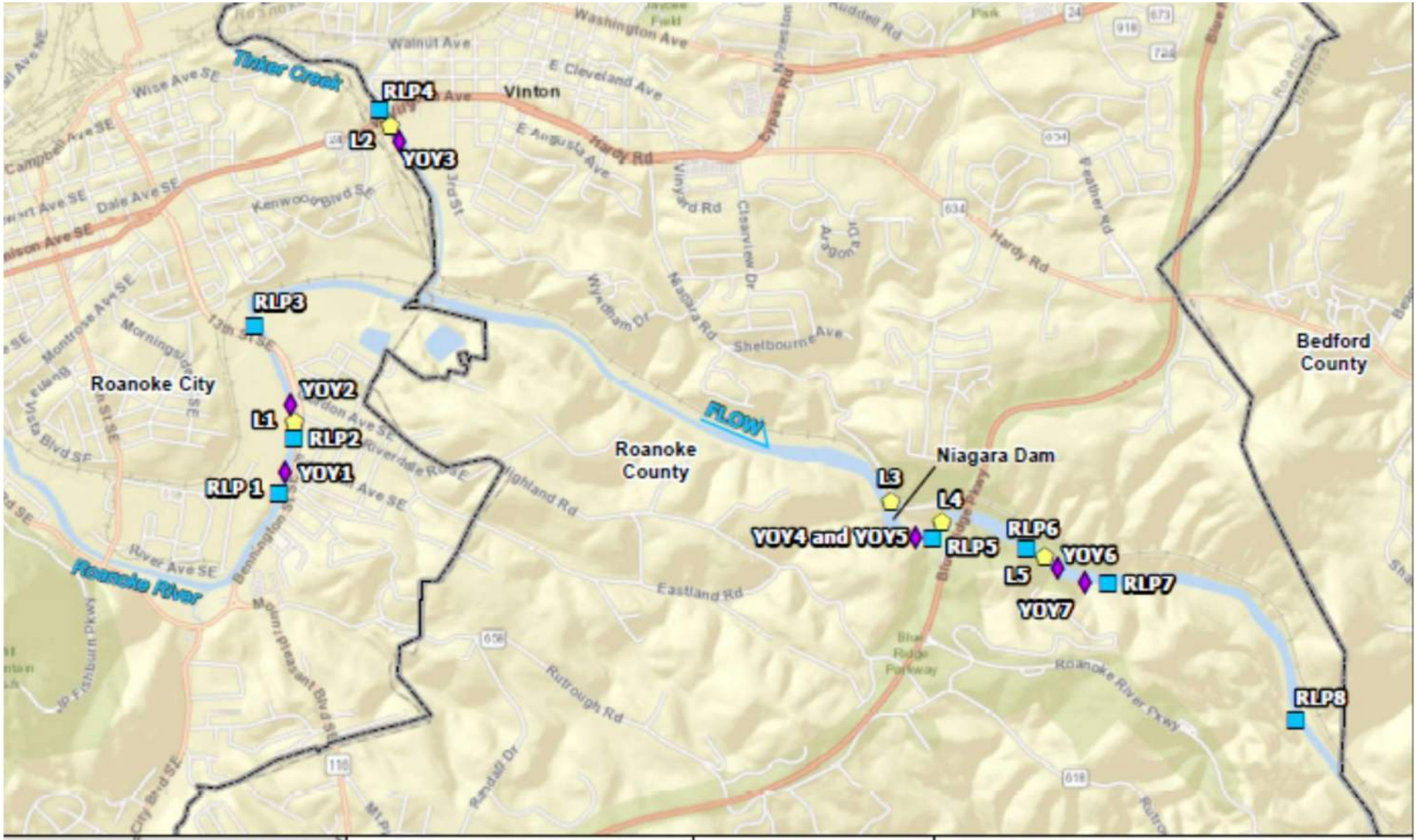
Roanoke Logperch Survey

Specific Objectives:

- Establish baseline abundance and distribution of Roanoke Logperch (including larvae, young-of-year [YOY], and adults) in the Roanoke River near the Project

Study Status:

- Roanoke Logperch YOY surveys were completed in 2021 in accordance with the RSP and SPD.
- Roanoke Logperch adult surveys were completed in 2021 using snorkel survey methods, a method change approved by VDWR and USFWS.
- Roanoke Logperch Larval Drift Survey rescheduled for spring 2022 due to delays in receiving the federal recovery permit from USFWS.
- Laboratory analyses to be performed under direction of Dr. Angermeier and Dr. Hallerman at Virginia Polytechnic Institute and State University.



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Niagara Dam Roanoke Logperch Study

Map 1
Overall Niagara Project area including Adult (RLP), Young-of-Year (YOY), and Larval (L) survey sites on the Roanoke River in Roanoke County, Virginia.

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Roanoke Logperch Survey

Survey Methods

- A quantitative assessment of suitable habitat was performed at each adult survey site following Ensign et al. (2000), Anderson and Angermeier (2015), and Anderson (2016):
  - 4 variables (water depth, velocity, silt coverage, and substrate) measured along grid formed by primary transects and secondary transects spaced at 12-meter intervals perpendicular to the primary transects
  - Variables were used to develop a Habitat Suitability Index (HSI) score based on HSI curves developed by Ensign and Angermeier 1994 and Ensign et al. 1998

Roanoke Logperch Survey

Survey Methods – Adults

- Snorkel surveys for adult Roanoke Logperch were performed at 8 riffle/run sites which included 4 to 9 transects varying from 30 to 235 meters in length.
- Snorkelers performed visual searches along transects/grids, moving from downstream to upstream and parallel to stream flow, while searching directly in front and from side-to-side.
- The distance from the snorkeler's centerline and the point where a Roanoke Logperch was initially observed was measured and recorded, followed by a GPS point, measurements for depth, velocity, silt cover, and five substrate measurements based on a modified Wentworth scale.

Roanoke Logperch Survey

Survey Methods – Young-of-Year

- Seining methods for young-of-year were derived from Argentina and Roberts (2014) and Roberts et al. (2016)
- 6 ft by 6 ft seine with 1/16-inch mesh
- Seine samples upstream of Niagara Dam:
  - 2 sites in the Roanoke River and one site in Tinker Creek; 20 seine hauls each site
- Seine samples downstream of Niagara Dam:
  - 2 sites in the bypass reach and 2 sites downstream of the tailrace; 20 seine hauls each site
- Seine samples were supplemented with visual searches along shoreline adjacent to low velocity habitats

Roanoke Logperch Survey

Statistical Analyses

- Adult Roanoke Logperch densities were calculated for each site per Ensign et al. (1995) and then compared to densities previously reported by Appalachian 1992 and other locally relevant studies

- No statistical analyses were necessary for young-of-year as none were collected during the survey

Roanoke Logperch Survey

Survey Results:

- Survey completed 5,460 meters of transections covering 21,688 square meters of habitat
- 61 Roanoke Logperch observations (7 juvenile and 54 adult) distributed amongst excellent (9), good (28), fair (22), and poor (2) quality habitats
- Mean density within Project boundary of 32 fish/hectare (SD=19.8)
- Mean density above Niagara Dam (23 logperch/hectare) compared to below Niagara Dam (24 logperch/hectare) was similar
- Mean density in Tinker Creek at 32 fish/hectare
- The average density of Roanoke Logperch between the spring and summer sample events in the bypass reach was 58 fish/hectare

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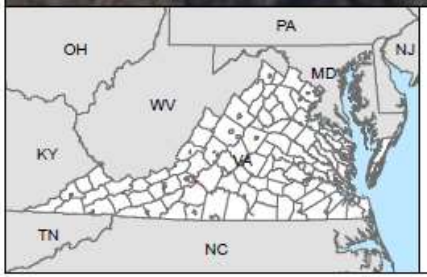
Roanoke Logperch Example



Roanoke Logperch Sighting
Snorkel Transect
Excellent Habitat
Good Habitat
Fair Habitat
Poor Habitat

N

0 10 20
Meters

Scale: 1:787

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Niagara Dam Roanoke Logperch Study

Map 10
Adult RLP snorkel survey extent including habitat suitability and RLP sighting locations in Roanoke, Virginia.

Roanoke Logperch Survey

Survey Summary:

- Appalachian 1992 documented 10 Roanoke Logperch approx. 1 mile downstream of Niagara Dam and concluded that the logperch were not expected to populate the Project boundary outside of the reach where the fish were located
- Regardless of Project influence, Roanoke Logperch were documented in poor to excellent quality habitats, at all of the survey sites, with the greatest density in the bypass reach
- Site densities ranged from 4.6 to 72.4 logperch per hectare; while the mean density within the overall Project boundary was 32 fish/hectare
- Results suggest that the Roanoke River in the Project boundary is supporting a robust population of Roanoke Logperch

Variances from FERC-approved Study Plan

Roanoke Logperch Survey

- Rescheduled from spring 2021 to spring 2022 due to delays in receiving the required USFWS federal recovery permit authorizing “take” of larval Roanoke Logperch
- Switch from 4 paired sites to 8 independent sites for the adult survey and added one YOY site in bypass reach and one downstream of tailrace per SPD
- Minor adjustments to survey site locations based on target habitat availability at the time of sampling
- Switch to snorkel methods for adult Roanoke Logperch instead of backpack electrofishing, with agency approval

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Impingement and Entrainment Study

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Impingement and Entrainment Study

Specific Objectives:

- Calculate approach velocities at the intake structure
- Assess entrainment potential at the Project during project hydropower generation
- Model turbine and spillway passage survival using the USFWS Turbine Blade Strike Analysis Model (2020)

Study Status:

- Appalachian completed the Impingement and Entrainment Study in accordance with the methods described in the RSP and SPD

Impingement and Entrainment Study

Assessment Methods

- **2020 Study Efforts – presented in ISR**
  - Compiled intake specifications, flow characteristics, and calculated approach velocity, identified target species/groups
  - Assessed potential of impingement or entrainment including intake avoidance, size exclusion, and early life stage entrainment
  - Estimated entrainment rates based on 33 facilities in the EPRI database

Impingement and Entrainment Study

2020 Study Results – Presented in ISR

- Intake avoidance and Impingement
  - Approach velocity - 1.1 fps
  - Swim burst speeds indicate that most juvenile and adult species can overcome approach velocities and avoid the intake
  - Bar rack spacing wide enough that most fish are easily entrained through the bars – if they cannot overcome velocities
- Early life stage entrainment susceptibility
  - Spawning primarily from May-June, subsequent egg and larval development from June-August
  - Spawning habitats required for most resident fish are not found in the vicinity of the intake structure; therefore, entrainment potential is considered low for most early life stages.

Impingement and Entrainment Study

Assessment Methods

- **2021 Study Efforts – presented in USR**
  - Estimated fish passage and blade strike survival using USFWS Turbine Blade Strike Analysis model (USFWS 2020)
  - Modeled under two operational scenarios
    - Typical/normal flow conditions – no spill beyond required min bypass flows
    - Spilling conditions* – flows distributed to turbines or spillway based on project-specific flow exceedance percentiles

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Fish Impingement and Entrainment Study

Methods - Operational Scenario 1:

- Estimated turbine blade strike probability and fish passage survival
- Based on typical/normal flow conditions where all flows pass through the Niagara turbines and powerhouse (no spill beyond the 8 cfs minimum bypass flow requirement)
- Estimated strike probability by fish length classes (2, 4, 6, 8, 10, 15, 20, 25, and 30 inches)
- Route selection probability based on percentage of flows passed at Niagara Unit 1 (54.8% of flows), Unit 2 (44.1% of flows), and required bypass flows (1.2% of flows)

Fish Impingement and Entrainment Study

Methods - Operational Scenario 2:

- Estimated turbine blade strike probability and fish passage survival during spilling conditions
- Route probabilities based on volume of spillage at the range of percentiles where river discharge exceeded turbine capacity
  - Unit 1 (379 cfs), Unit 2 (305 cfs), required bypass flows (8 cfs), and spillage flows at 20, 17, 15, 12, 10, 7, 5, 2, and 0.01 percent exceedances.
  - Modeled for 4-inch Roanoke Logperch with standard deviation of 0 inches based on site-specific data and the typical size of Roanoke Logperch expected to be entrained at hydroelectric projects (Froese and Pauly 2021).

*The probability of a fish passing through a turbine or via spill was assumed to be in direct proportion to the volume of flow passing through each route. A spillway and bypass passage survival rate of 97 percent was assumed based on the average of 136 survival tests conducted with juvenile salmonids on the Columbia river (Amaral et al. 2013).

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Impingement and Entrainment Study Results

Scenario 1 Results – Strike and Survival Probabilities by Fish Size Class (all species) under Typical Operations

Size Class (inches)	Blade Strike Probability	Bypass Failure Probability	Survival Probability
0-2	8.7	0.1	91.2
2.1-4	18.2	0.1	81.8
4.1-6	26.3	0.0	73.7
6.1-8	34.3	0.0	65.7
8.1-10	46.4	0.0	53.6
10.1-15	66.0	0.0	34.0
15.1-20	89.8	0.0	10.2
20.1-25	98.9	0.1	1.0
25.1-30	98.8	0.1	1.0

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Impingement and Entrainment Study Results

Scenario 2 Results – Roanoke Logperch Passage

Flow Data Period	Flow Exceedance (%)	Volume Spill (cfs)	Spill Route Selection Probability	Turbine Strikes (%)	Spillway Mortalities (%)	Cumulative Downstream Passage Survival (%)
Annual	20	13	0.018	18.4	0.2	81.4
Annual	17	88	0.113	16.4	0.3	83.3
Annual	15	153	0.181	13.7	0.7	85.7
Annual	12	288	0.294	11.9	1	87.1
Annual	10	398	0.365	13.6	1.1	85.2
Annual	7	678	0.495	9.4	1.5	89.1
Annual	5	1,008	0.593	6.7	1.3	92
Annual	2	2,218	0.762	4.1	2.4	93.5
Annual	0.01	18,109	0.963	0.8	3.2	96

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Fish Impingement and Entrainment Study

Turbine Blade Strike Results Summary

- Cumulative passage survival for 4-inch Roanoke Logperch was:
  - Between 81.4 and 96.0 percent
  - Highest cumulative survival would occur at the 0.01 % flow exceedance when approx. 18,109 cfs of river flows would be spilled into the bypass channel
  - Survival increases with increasing spill volume due to low spill mortality and reduced blade strike probability
- Risk of spillway mortality was low at 0.1 percent or less across all fish length classes
- Fish length classes most at risk of entrainment (<6 inches) are estimated to have cumulative downstream passage survival between 73.7 and 91.3 percent

Variances from FERC-approved Study Plan

Variances from FERC-approved Study Plan:

- Intake velocity
  - Unable to evaluate with ADCP due to high low events and station operation
  - Determined using desktop calculation

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Benthic Aquatic Resources Study

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Benthic Aquatic Resources Study

- **Study Goal:** Obtain current information on the benthic aquatic community in the Roanoke River in the vicinity of the Project to support an analysis of Project effects
- **Specific Objectives:**
  - Quantify the amount of benthic habitat available for macroinvertebrates, crayfish, and mussels within the bypass reach;
  - Collect a baseline of existing macroinvertebrate and crayfish communities in the vicinity of the Project using two temporally independent sampling efforts (fall 2020 index period and spring 2021 index period); and
  - Identify potential habitat and characterize mussel communities within the Study Area.

Benthic Aquatic Resources Study

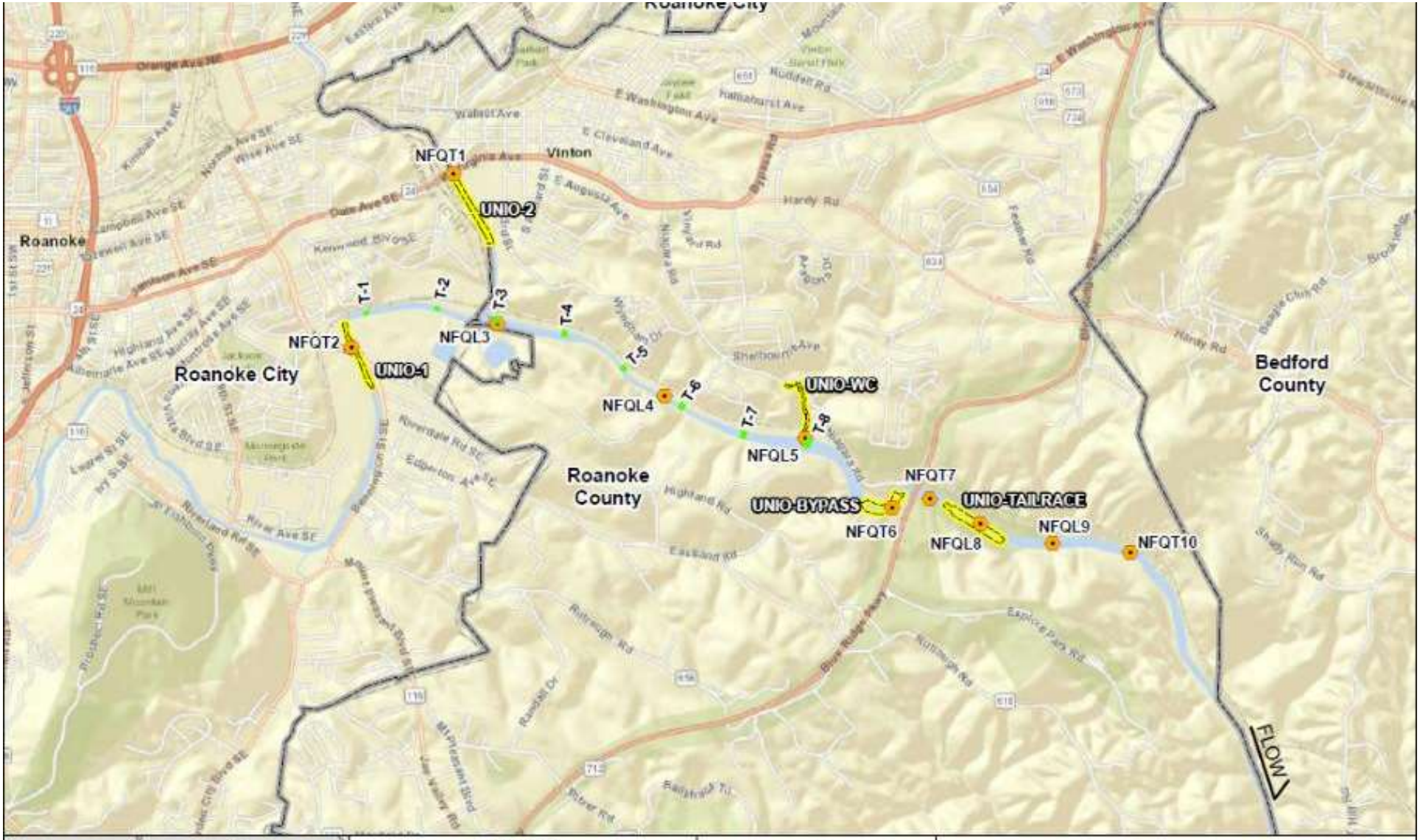
Study Status

- Appalachian completed study activities for the Benthic Aquatic Resources Study in accordance with the schedule and methods described in the RSP and SPD.
  - Completed fall 2020 and spring 2021 field sampling
  - Taxonomic identification was completed summer 2021
  - Mussel survey completed in 2020 and reported in the ISR, no further discussion provided

Benthic Aquatic Resources Study

Macroinvertebrate and Crayfish Study Methods

- September 15-16 and October 5, 2020 – fall index period
- June 3-4, 2021 - spring index period
- Quantitative Transect Samples
  - 5 riffle/run sites along 100-m transects, 2 above and 3 below Niagara dam
  - Each site consists of 6 kick net sets composited into one sample
  - Each sample equals approximately 2 square meters
  - Crayfish data supplemented with seine hauls
- Qualitative Abbreviated Samples
  - 5 pool sites, 3 above and 2 below Niagara dam
  - 20 dip-net grabs of representative habitats in proportion to their availability
  - Each sample covers approximately 1 linear meter of habitat



Legend

- Macroinvertebrate Sample Location
- Mussel Survey Transect
- Mussel Survey Area
- County Boundary

N

0 0.5 1

Kilometers

Scale: 1:39,370

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Niagara Dam Benthic Aquatic Resource Study

Figure 1

Overall Niagara project area including quantitative (NFQT) and qualitative (NFQL) macroinvertebrate survey sites and transect (T) and abbreviated (UNIO) mussel survey sites on the Roanoke River in Roanoke County, Virginia

Benthic Aquatic Resources Study

Macroinvertebrate Study Results

- Sites Upstream of Niagara Dam
  - 38 macroinvertebrate taxa collected from 2 quantitative sites and 3 qualitative sites
  - Average fall 2020 VSCI scores at riffle/run sites was 48.1 and for pool sites was 34.7
  - Average spring 2021 VSCI scores at riffle/run sites was 44.1 and pool sites was 20.6
- Sites downstream of Niagara Dam
  - 45 macroinvertebrate taxa from 3 quantitative and 2 qualitative sites
  - Average fall 2020 VSCI scores at riffle/run sites was 39.0 and for pool sites was 42.8
  - Average spring 2021 VSCI scores at riffle/run sites was 38.1 and for pool sites was 41.1

Benthic Aquatic Resources Study

Crayfish Study Results

- 5 species of crayfish collected and identified in the field during survey efforts at 8 of the 10 sites
- *Native Species*
  - Collected two native species upstream and one downstream of dam
  - Appalachian Brook Crayfish (*Cambarus bartoni bartoni*)
  - Atlantic Slope Crayfish (*Cambarus longulus*)
- *Invasive Species*
  - Collected two species upstream and three species downstream of dam
  - Ozark Crayfish (*Faxonius ozarkae*) – present at all sites where crayfish collected
  - Virile Crayfish (*Faxonius virilis*)
  - Red Swamp Crayfish (*Procambarus clarkii*)

Atlantic Slope Crayfish

Virile Crayfish

Benthic Aquatic Resources Study

Macroinvertebrate Study - Summary

- VSCI scores indicate impaired conditions above and below Niagara Dam in both fall and spring samples

- Crayfish community diversity and abundance was low compared to the number of known crayfish species in Virginia

- More invasive crayfish species were documented in the Project boundary than native species

Variances from FERC-approved Study Plan

- The macroinvertebrate and mussel sampling efforts were completed in accordance with the RSP and SPD.

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Water Quality Study

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Water Quality Study

Study Goal: Conduct a study to support an analysis of the potential Project-related effects on water quality

Specific Objectives:

- Gather baseline water quality data sufficient to determine consistency of existing Project operations with applicable Virginia state water quality standards and designated uses
- Provide data to determine the presence and extent, if any, of temperature or dissolved oxygen (DO) stratification in the Niagara impoundment
- Provide data to support a Virginia Water Protection Permit application (CWA Section 401 Certification)
- Provide information to support evaluation of whether additional or modified protection, mitigation, and enhancement (PM&E) measures may be appropriate for the protection of water quality at the Project

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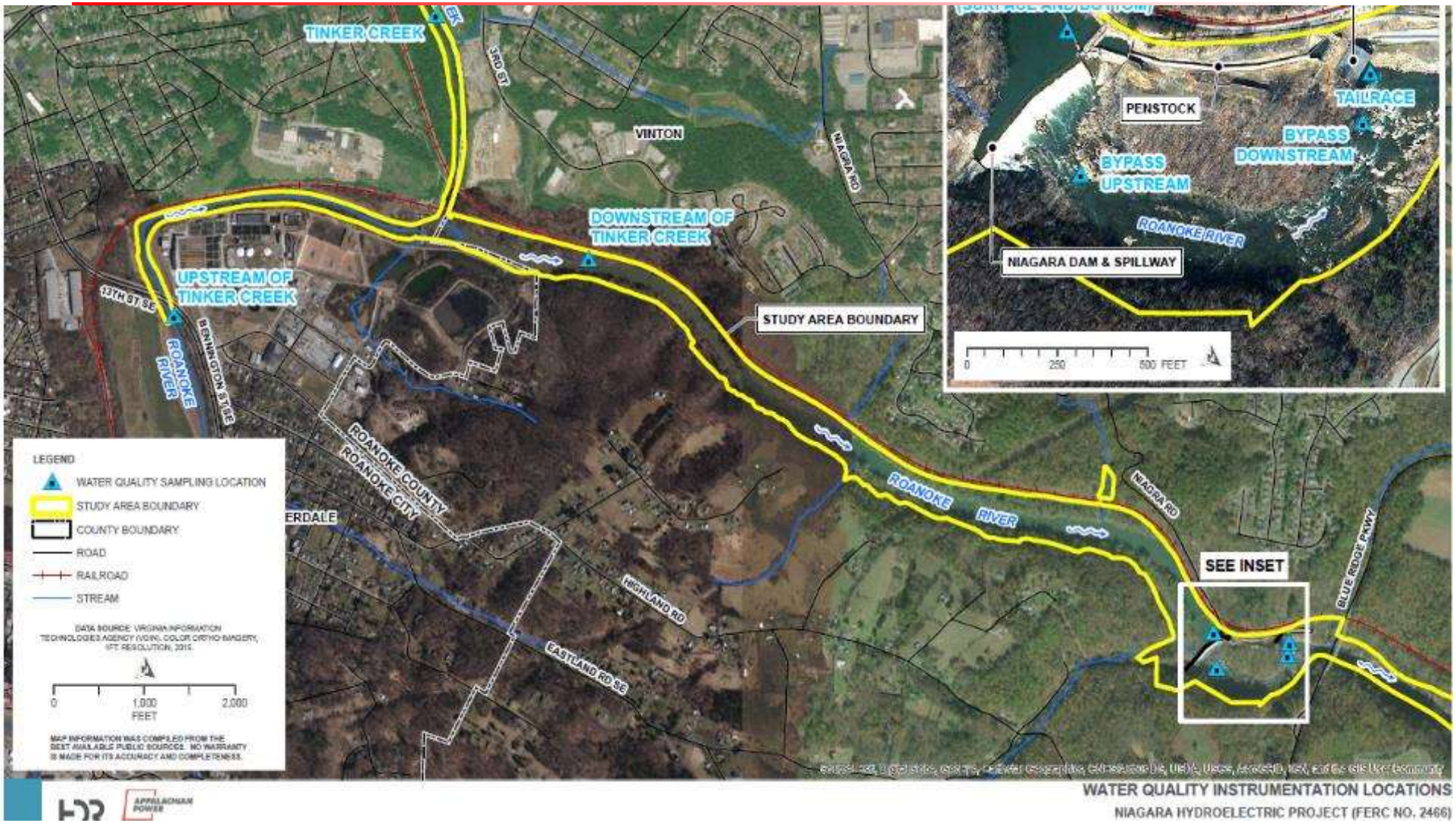
Water Quality Study Area



WATER QUALITY INSTRUMENTATION LOCATIONS

NIAGARA HYDROELECTRIC PROJECT (FERC NO. 2466)

Water Quality Study

Study Status

Appalachian has initiated and completed the Water Quality Study in accordance with the schedule and methods described in the RSP and SPD

Study Periods

2020: July 29 – November 10

- 13th Street Bridge
- Tinker Creek
- Downstream of Tinker Creek
- Forebay
- Tailrace
- Bypass reach (2 locations)

2021: June 29 – October 27

- 13th Street Bridge (USGS data)
- Tinker Creek (USGS data)
- Forebay (vertical profiles)
- Tailrace
- Bypass reach (2 locations)

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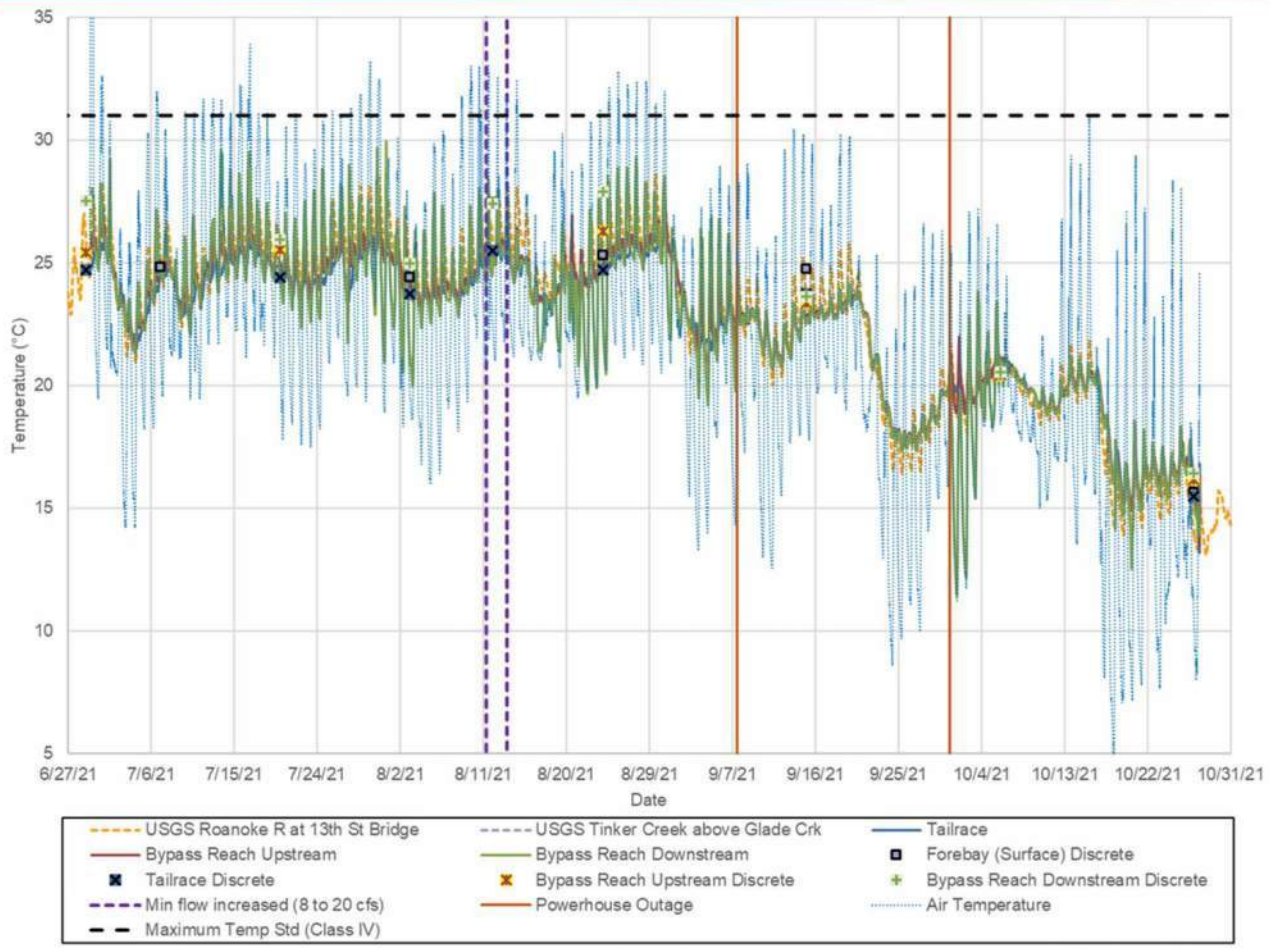
Water Temperatures



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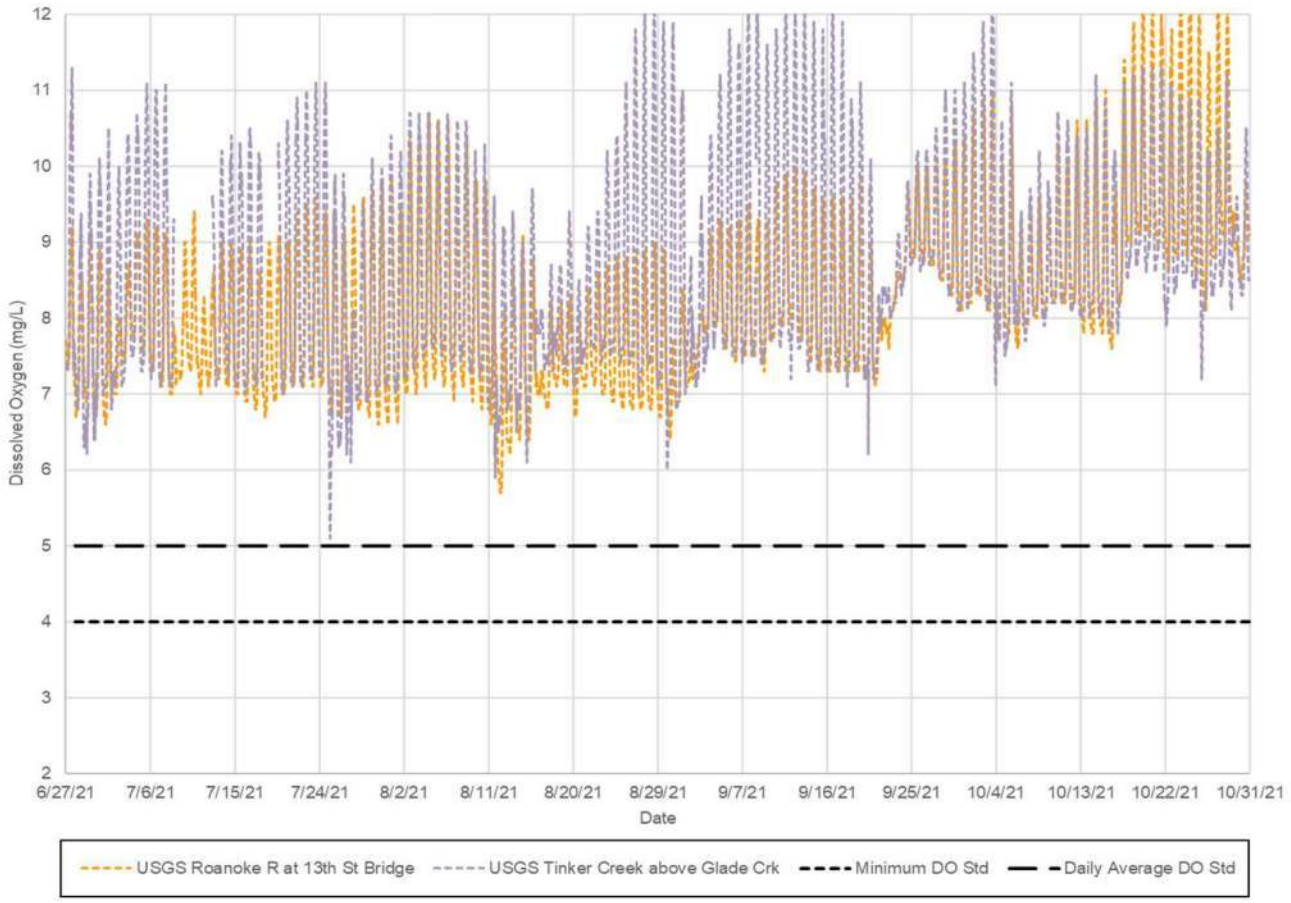
Dissolved Oxygen Upstream Monitoring



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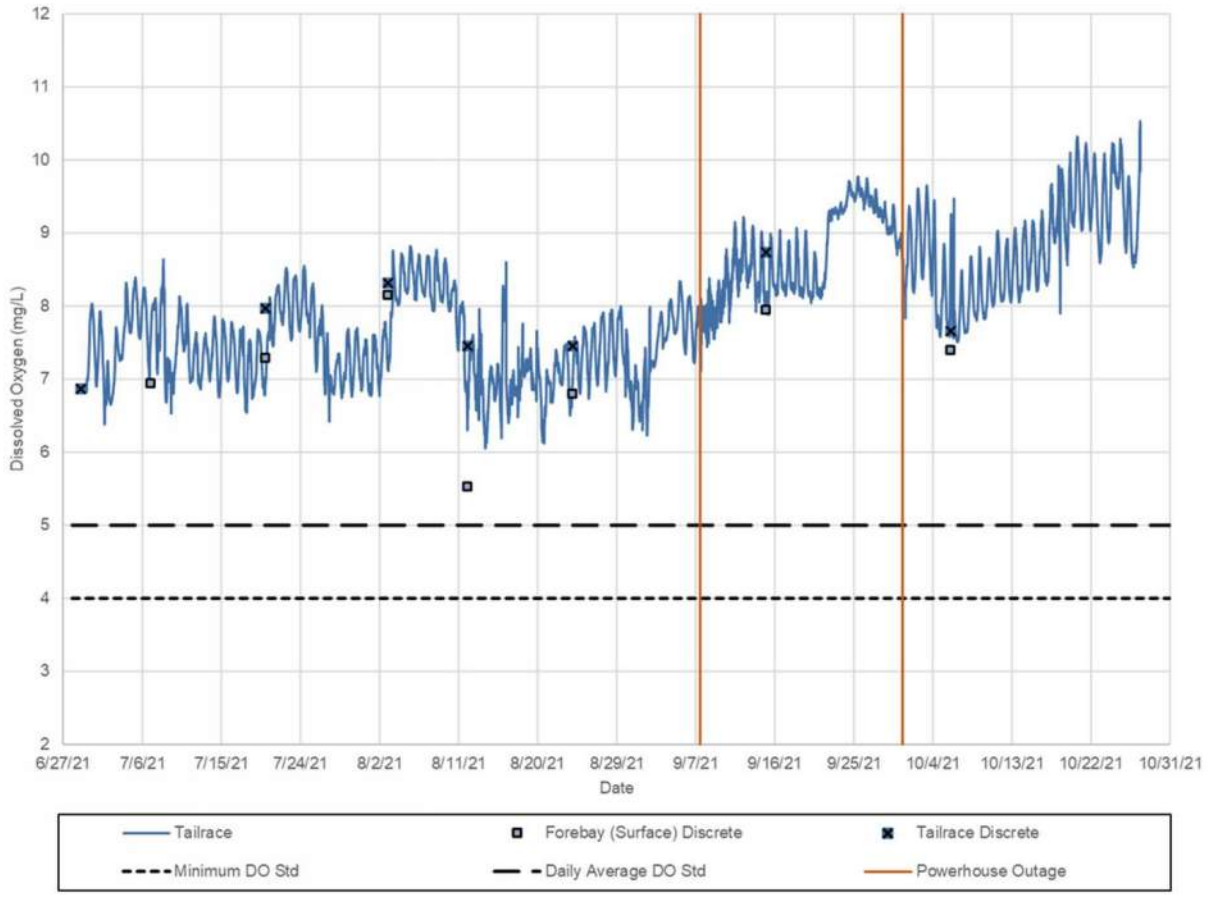
Dissolved Oxygen Forebay and Tailrace



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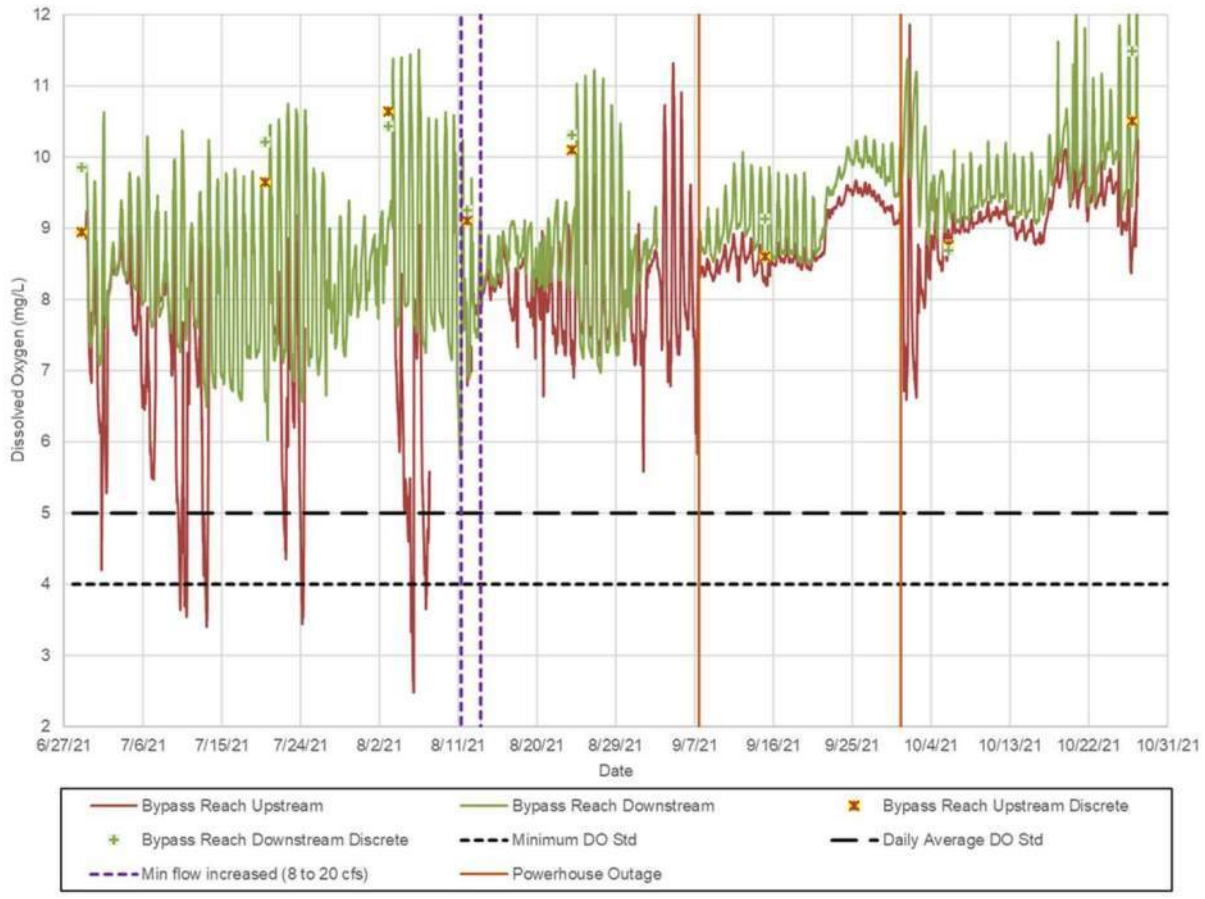
Dissolved Oxygen Bypass Reach



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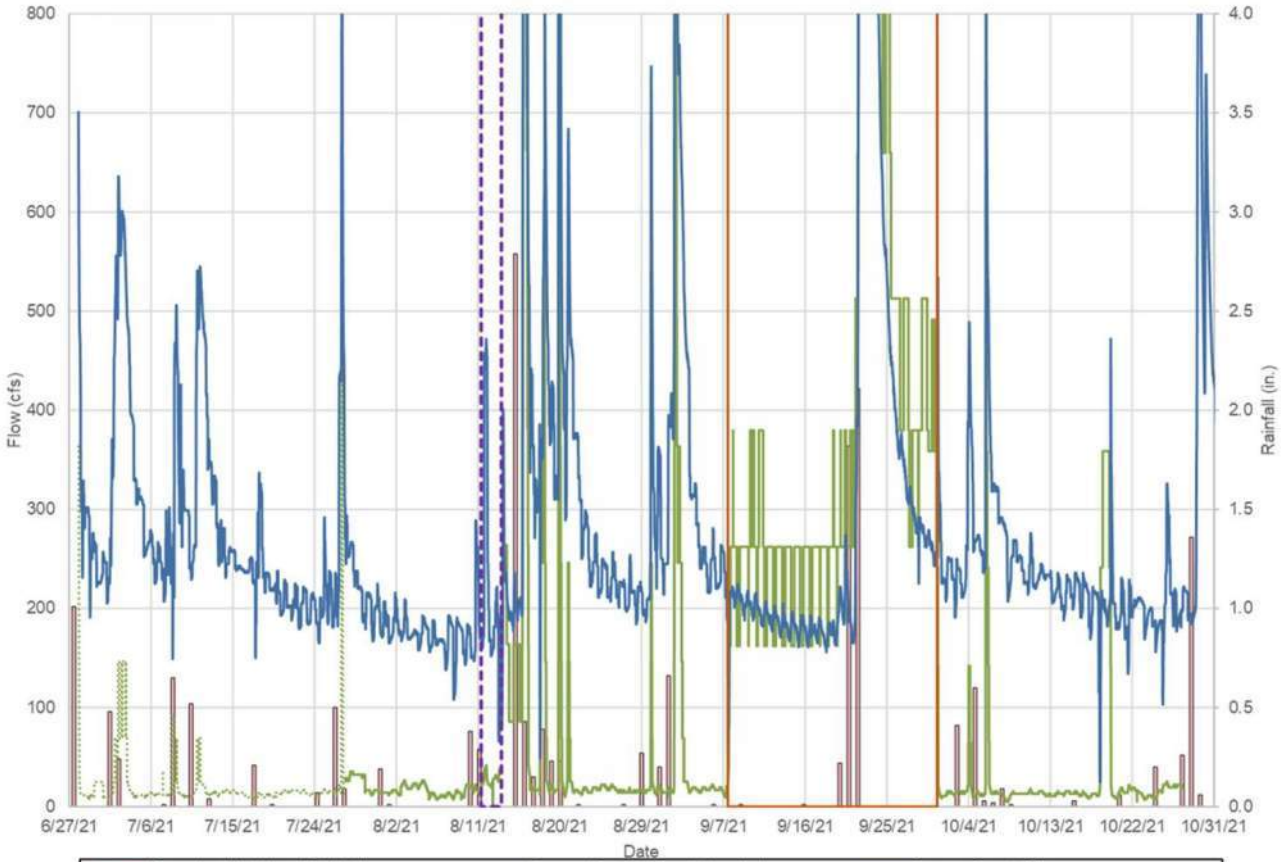
Bypass Reach Flows



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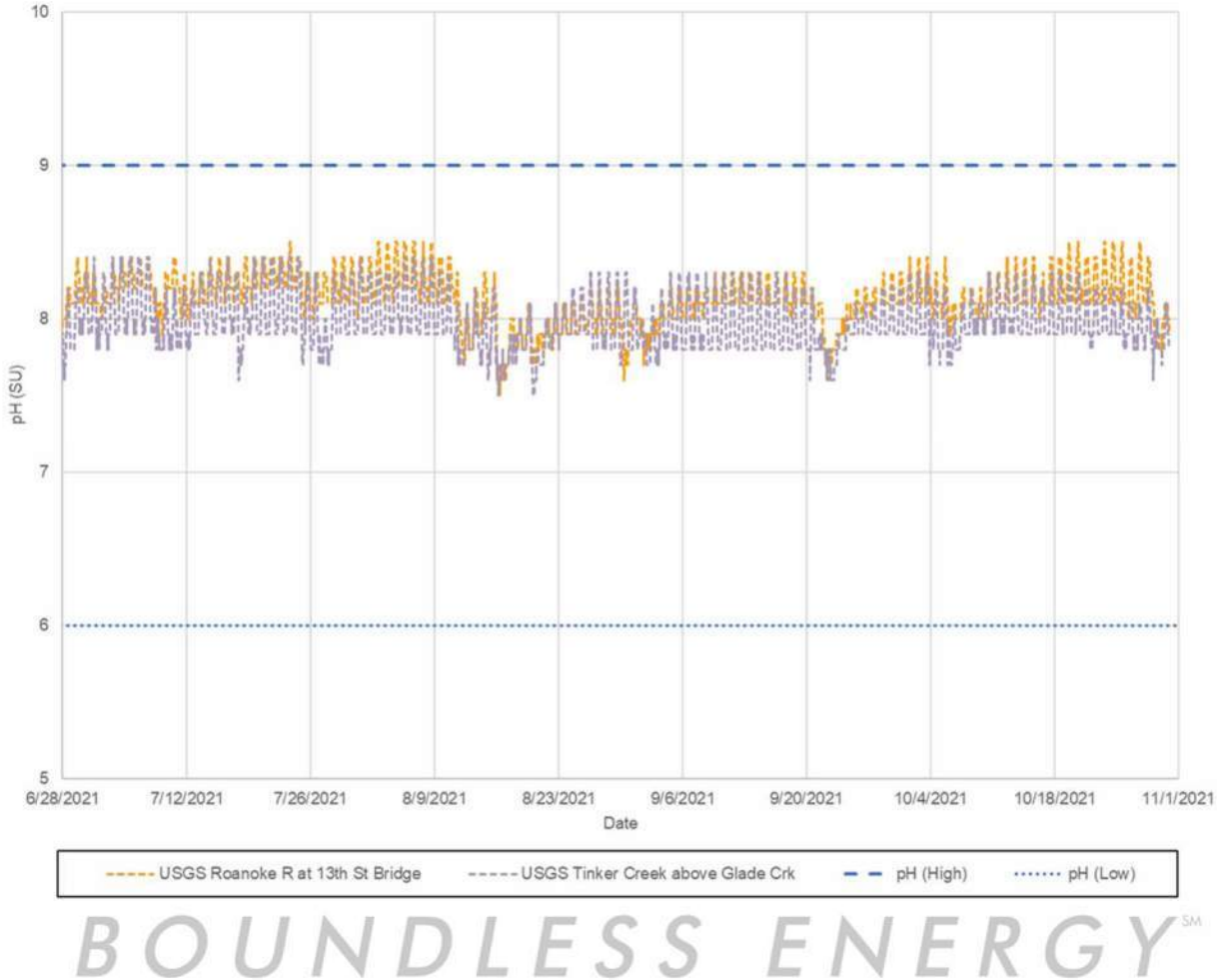
Upstream Monitoring - pH



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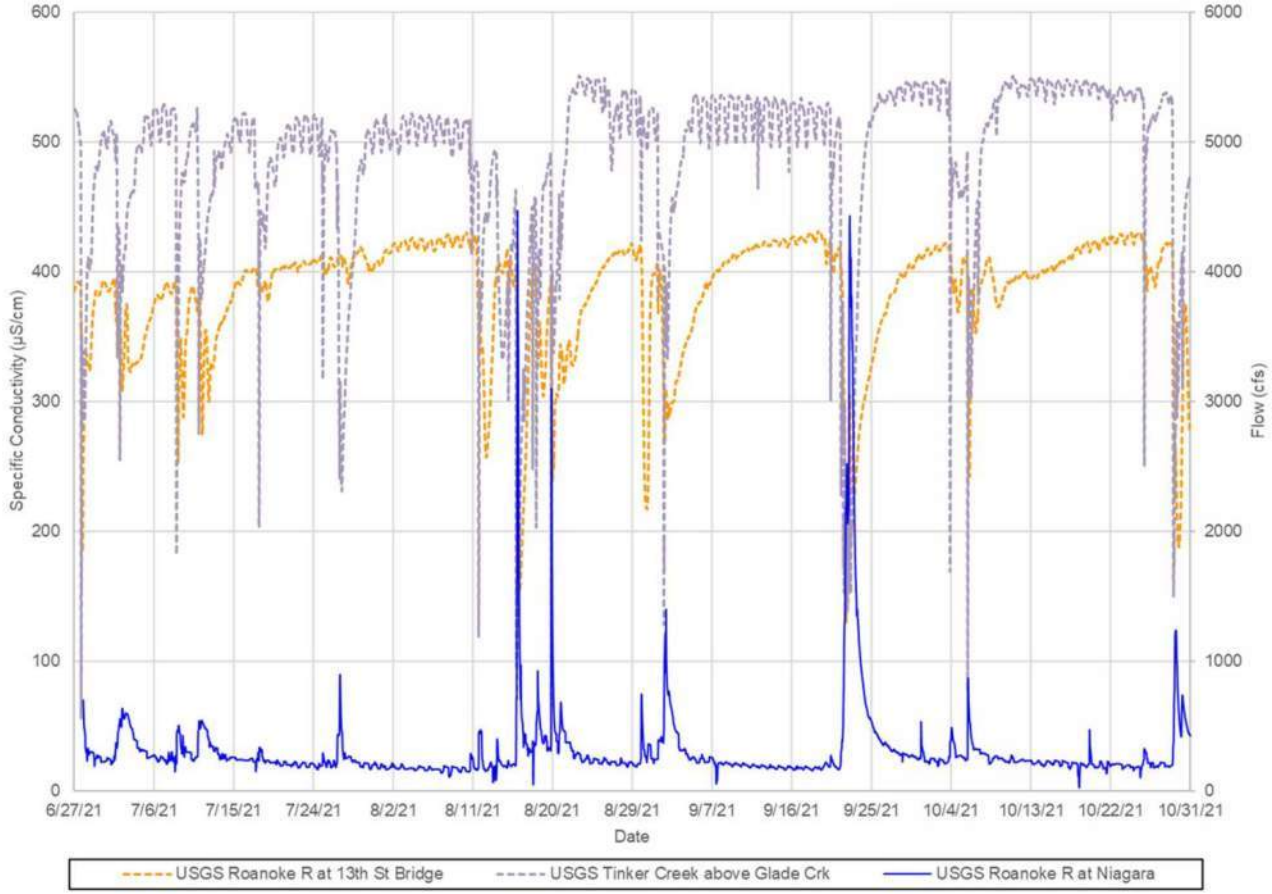
Upstream Monitoring Specific Conductivity



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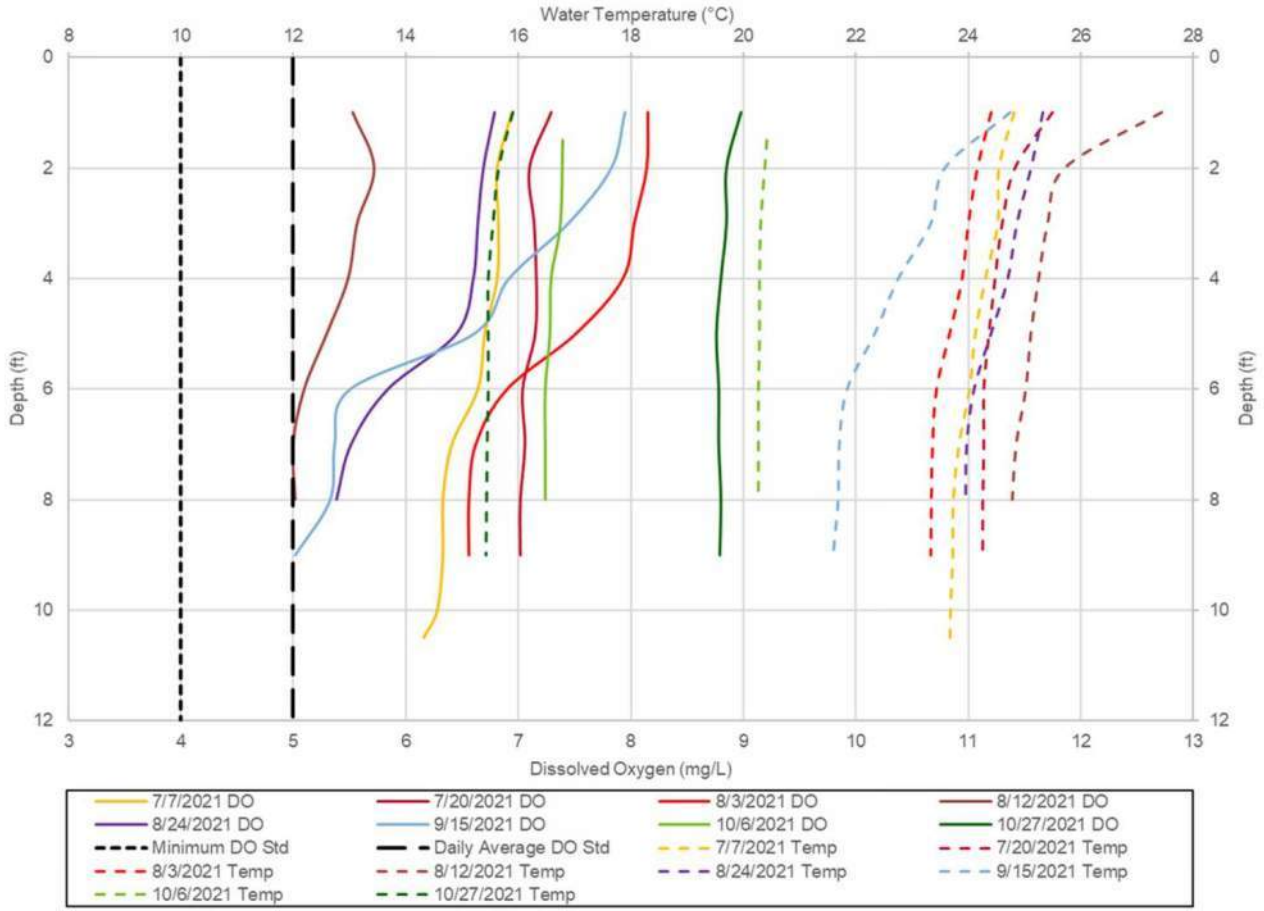
Forebay Vertical Profiles Temperature and DO



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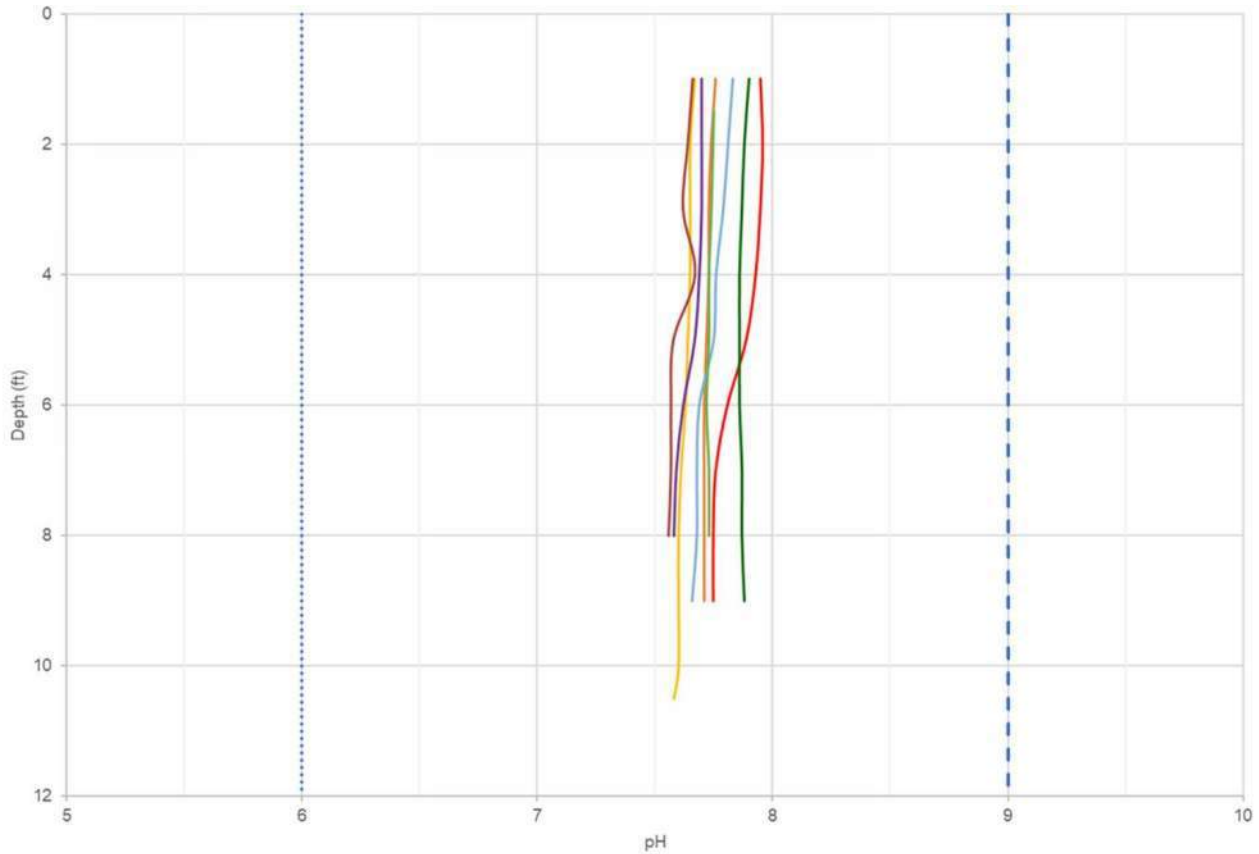
Forebay Vertical Profiles
pH



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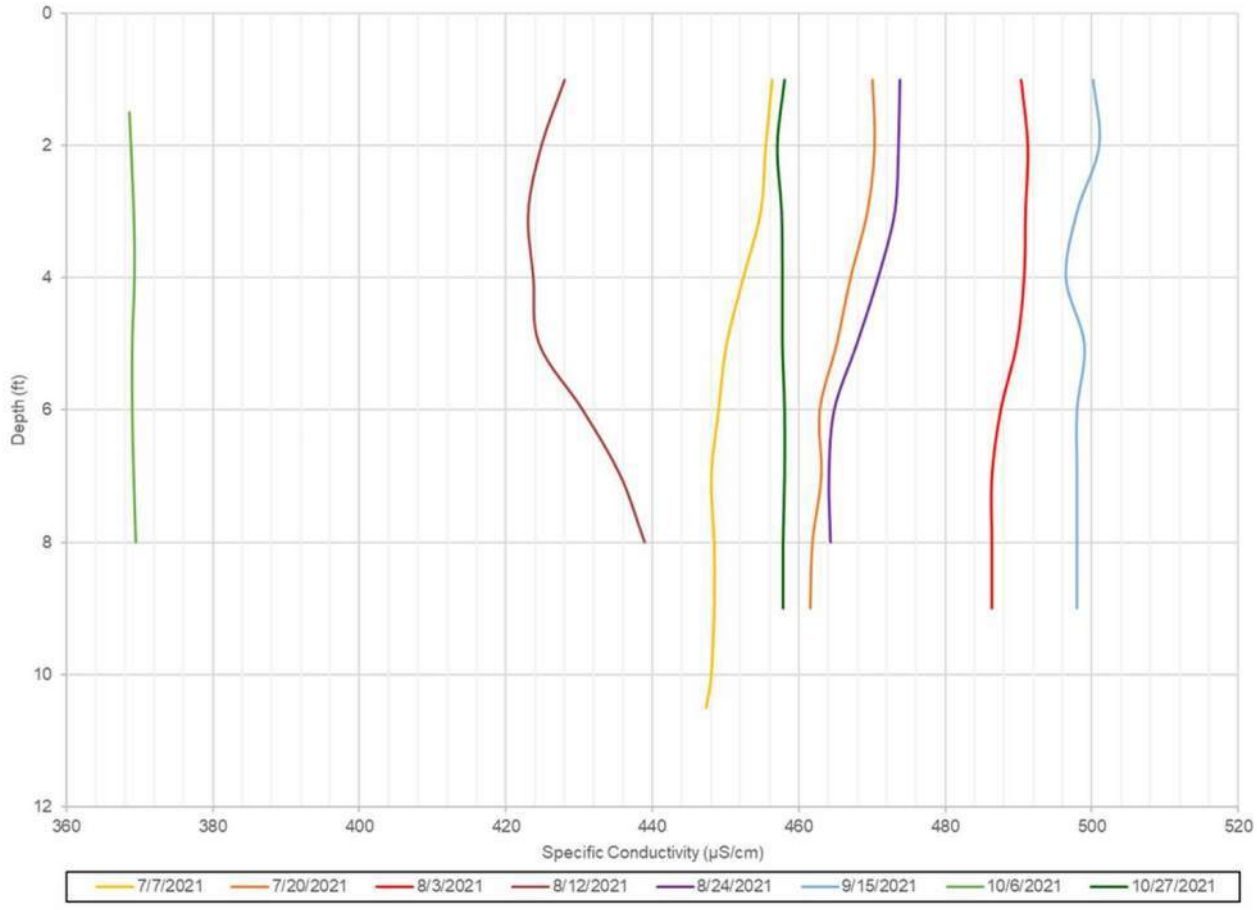
Forebay Vertical Profiles Specific Conductivity



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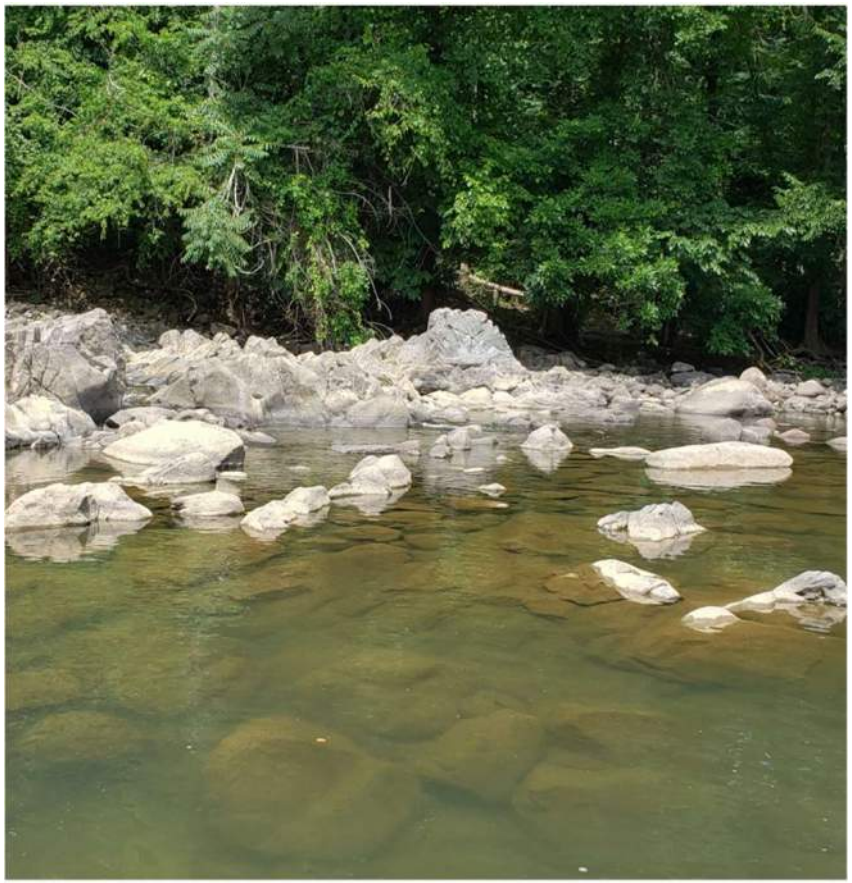
Water Quality Study Summary and Conclusions

- Water temperatures, DO concentrations, and pH measurements largely met Virginia Class IV (Roanoke River) and Class VII (Tinker Creek) water quality standards during 2021
- The exception was the instantaneous DO standard (4 mg/l) at the upstream bypass reach monitoring location during the hottest portion of the summer when bypass flows were at the 8.0 cfs minimum required flow release
- Increasing the bypass reach flow to ~20 cfs resulted in increased DO concentrations at this location



Niagara Bypass Reach min flow 7.01.2021

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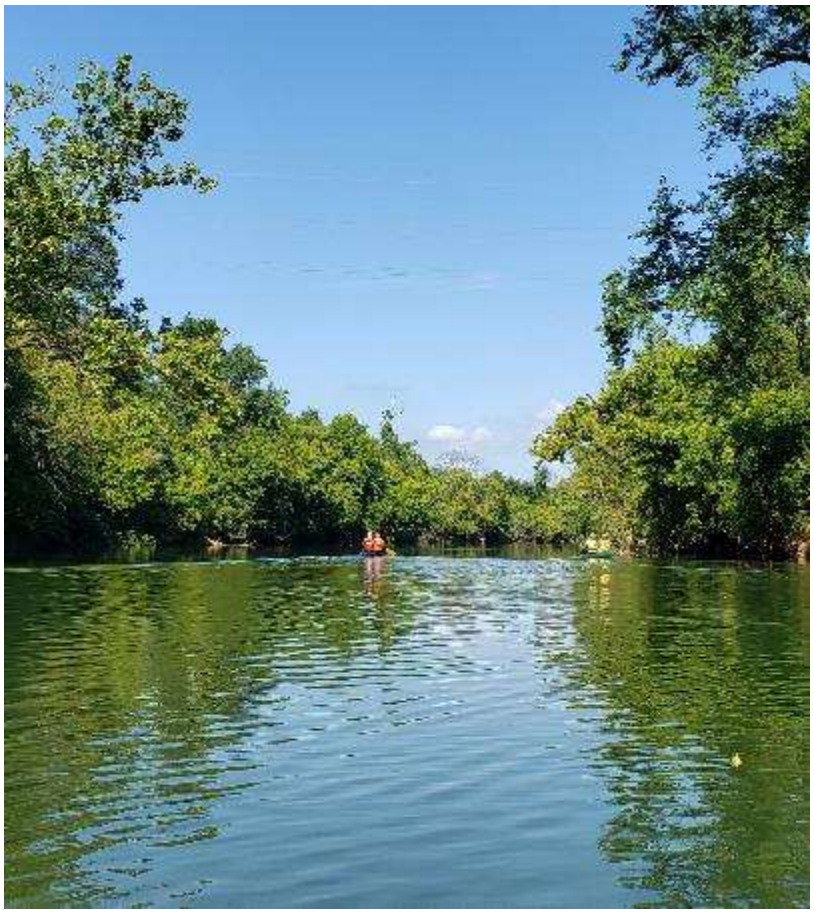
Water Quality Study Summary and Conclusions

- pH and specific conductivity ranges are suitable for aquatic species
- Little to no thermal or DO stratification at the reservoir and forebay monitoring locations except during periods of low Project inflows or powerhouse outages
- As a result, no need for additional PM&E measures to protect water quality at the Project



Variances from FERC-approved Study Plan

- Based on the results and findings from the 2020 study, FERC approved a study modification requiring additional water quality data collection at Niagara in 2021.
  - Bypass reach (continuous monitoring; 2 locations)
  - Tailrace (continuous monitoring)
  - Forebay (vertical profiles during download events)
  - 13th Street Bridge (include data from USGS gaging location)
  - Tinker Creek (include data from USGS gaging location)

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Afternoon break

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Bypass Reach Flow and Aquatic Habitat Study

Niagara Bypass Reach 24 cfs 6.30.2021

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Bypass Reach Flow and Aquatic Habitat Study

Study Goal: Conduct a flow and habitat assessment of the Project's tailrace and bypass reach using desktop, field survey, and hydraulic/habitat modeling methodologies

Specific Objectives

- Delineate and quantify aquatic habitats and substrate types within the bypass reach
- Identify and characterize locations of habitat management interest within the bypass reach
- Determine surface water travel times and water surface elevation responses at various gate openings to:
  - Evaluate potential available habitat at the existing 8 cfs minimum bypass flow requirement
  - Evaluate potential seasonal minimum flow releases in the bypass reach

Bypass Reach Flow and Aquatic Habitat Study

Study Status

Appalachian initiated the Bypass Reach Flow and Aquatic Habitat Study in accordance with the methods described in the RSP and SPD

Study Periods

2020

- Completed desktop habitat mapping and evaluation of Project inflows
- Assembled/Developed Habitat Suitability Index (HSI) criteria
- Developed a model calibration target flow recommendation
- Study update presented at the ISR meeting during January 2021

2021

- Collected field data during 4 target calibration flow events
- Developed 2-D hydraulic model
- Developed habitat results for species of interest at the 4 target calibration flows

NIAGARA DEVELOPMENT BYPASS REACH STUDY AREA

NIAGARA HYDROELECTRIC PROJECT (FERC NO. 2466)

ROANOKE COUNTY, VIRGINIA

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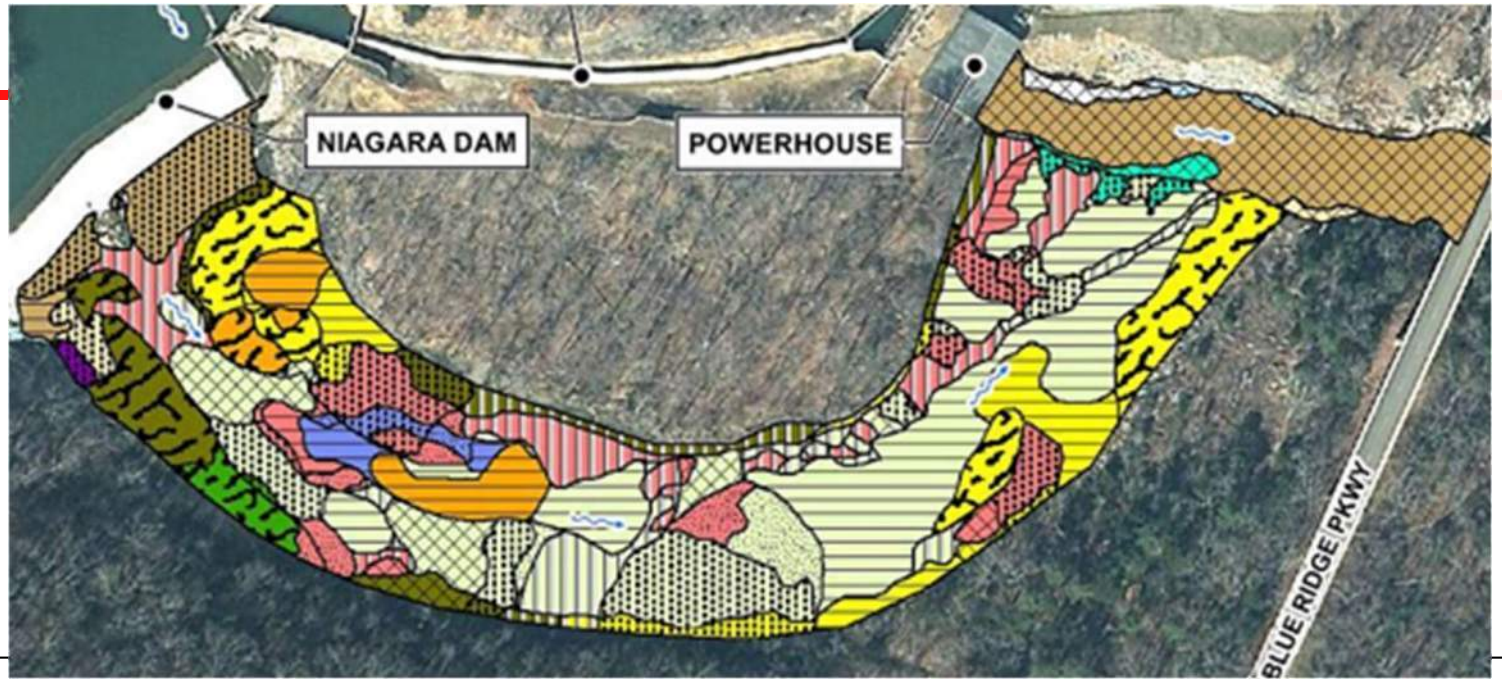
Desktop Habitat Delineation



Mesohabitat Type	Cover, Substrate Catagories	
Glide	No Cover, and Boulder	No Cover, and Sand
Pool	No Cover, and Boulder, Bedrock, or Woody Debris	No Cover, and Small Boulder
Riffle	No Cover, and Cobble	Overhead Veg and Boulder, Bedrock, or Woody Debris
Run	No Cover, and Gravel	Overhead Veg, and Cobble
Shoal	No Cover, and Mud or Bedrock	Overhead Veg, and Gravel
Upland		Overhead Veg, and Sand

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Summary of Aquatic Habitat Characteristics

Habitat Characteristics	Bypass	
	Area (ac.)	Percent
Cover		
Instream Cover	4.16	60.6
Overhead Vegetation	1.88	27.3
No Cover	0.83	12.1
Total	6.87	100.0
Substrate		
Boulder, Bedrock, or Woody Debris	4.34	63.2
Cobble	1.78	25.9
Mud or Flat Bedrock	0.35	5.2
Gravel	0.31	4.5
Sand	0.09	1.3
Total	6.87	100.0
Mesohabitat		
Shoal	2.20	32.1
Pool	1.65	24.1
Riffle	1.08	15.8
Upland	1.08	15.8
Run	0.49	7.2
Glide	0.35	5.1
Total	6.87	100.0

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Species of Interest RLP and Guilds

Species or Guild	Life Stage/ Category	Representative
Roanoke Logperch	Adult	--
	Subadult	--
	Young-of-Year	--
Shallow-Slow Guild	Fine substrate, no cover	Redbreast Sunfish spawning
	All substrate with aquatic vegetation	Silver Redhorse Young-of-Year
	Coarse substrate	Generic shallow-slow guild
Shallow-Fast Guild	Moderate velocity with coarse substrate	Generic shallow-fast guild
Deep-Slow Guild	Cover	Redbreast Sunfish Adult
	No cover	Generic deep-slow guild
Deep-Fast Guild	Slightly weighted for fine substrate, Cover	Silver Redhorse adult
	Coarse-mixed substrate	Shorthead Redhorse adult

Redbreast Sunfish
Courtesy: Virginia DWR

Silver Redhorse
Courtesy: USGS

Shorthead Redhorse
Courtesy: Iowa DNR

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Roanoke Logperch Habitat Suitability Indices

Habitat Suitability Criteria	Habitat Suitability Index
Mean Velocity (centimeters/second [cm/s])	**Adult**
0-10	0.15
11-20	0.40
21-30	0.81
31-40	0.90
41-50	1.00
51-60	0.73
61-70	0.83
>70	0.49
Depth (cm)	**Adult**
0-10	0
11-20	0.02
21-30	0.15
31-40	0.56
41-50	1.00
51-60	0.63
61-70	0.62
>70	0.21
Substrate	**Adult**
Silt (≤0.06 millimeters [mm])	0
Sand (0.07-2.00 mm)	0
Gravel (3-64 mm)	0.36
Cobble (65-256 mm)	1.00
Boulder/Bedrock (>256 mm)	0.56

Adult criteria based on Ensign et al. (1998) and Ensign et al. (2000)

Male Roanoke Logperch
Courtesy: The Roanoke Star News

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Roanoke Logperch Habitat Suitability Indices

Habitat Suitability Criteria	Habitat Suitability Index	
Mean Velocity (cm/s)	**Subadult**	**YOY**
0	0.00	0.27
1-4	0.00	1.00
4-10	1.00	0.09
11-40	0.17	0.00
>41	0.24	0.00
Depth (cm)	**Subadult**	**YOY**
0-15	0.00	0.06
16-30	0.67	1.00
31-50	1.00	0.00
>51	0.25	0.00
Substrate (rank)[1]	**Subadult**	**YOY**
<3	0.00	0.00
4-6	1.00	1.00
7	0.67	0.00
8-9	0.10	0.00

Rankings: 0-3=organic matter, clay, and silt; 4-6=sand, small gravel, large gravel; 7=cobble; 8-9=boulder and bedrock.

Subadult and YOY criteria based on Rosenberger and Angermeier (2003)

Male Roanoke Logperch
Courtesy: The Roanoke Star News

Niagara 2-D Hydraulic Model Calibration Flows

Measured Bypass Flows:

- Day 1, Minimum: 7 cfs
- Day 2, Low: 24 cfs
- Day 3, Middle: 33 cfs
- Day 4, High: 91 cfs

Generation Flows:

- Day 1: 225 cfs
- Day 2: 185 cfs
- Day 3: 175 cfs
- Day 4: 218 cfs

Niagara Spillway min flow
6.30.2021

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Niagara 2-D Hydraulic Model
Water Surface Elevation Monitoring

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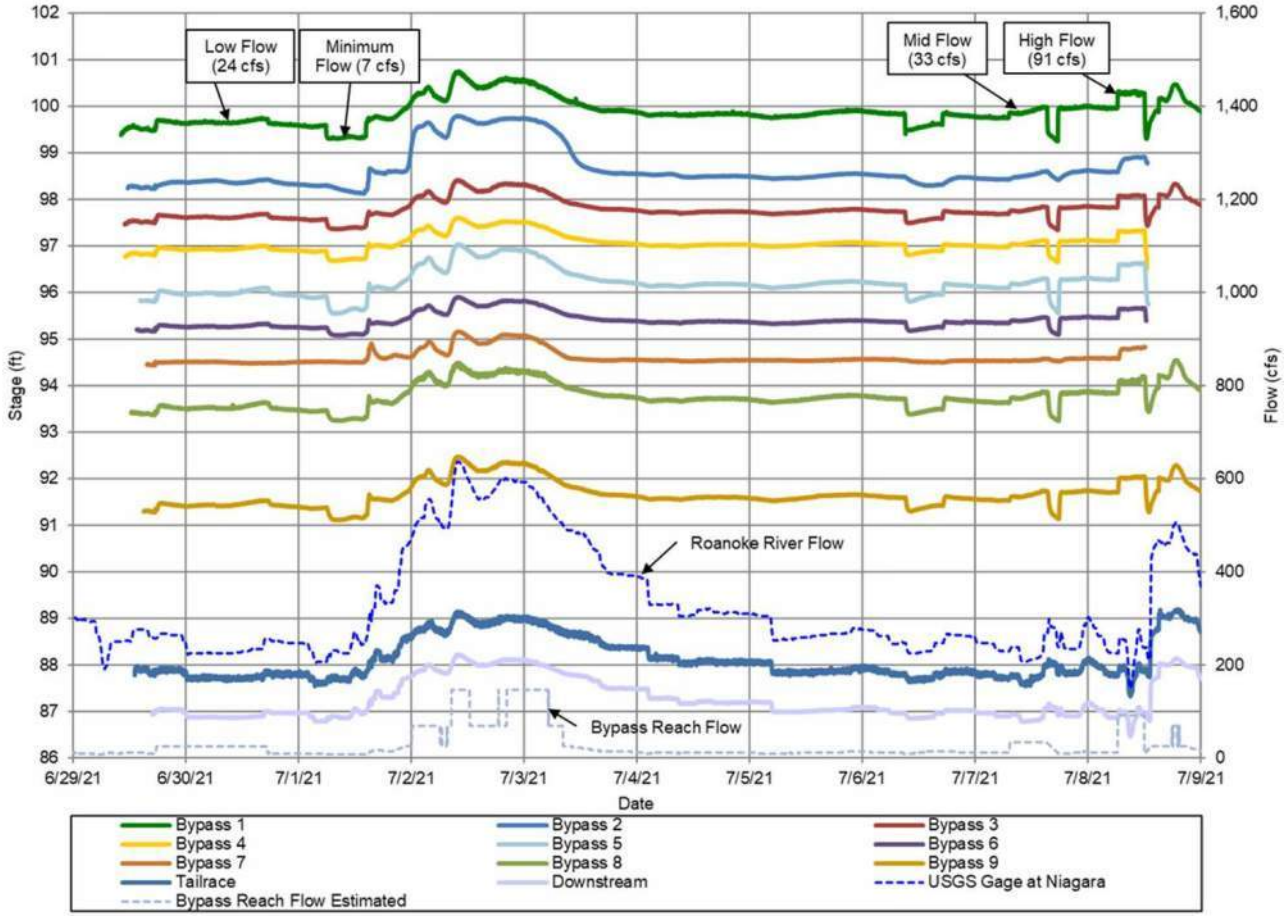
Niagara 2-D Hydraulic Model
Water Surface Elevation Monitoring



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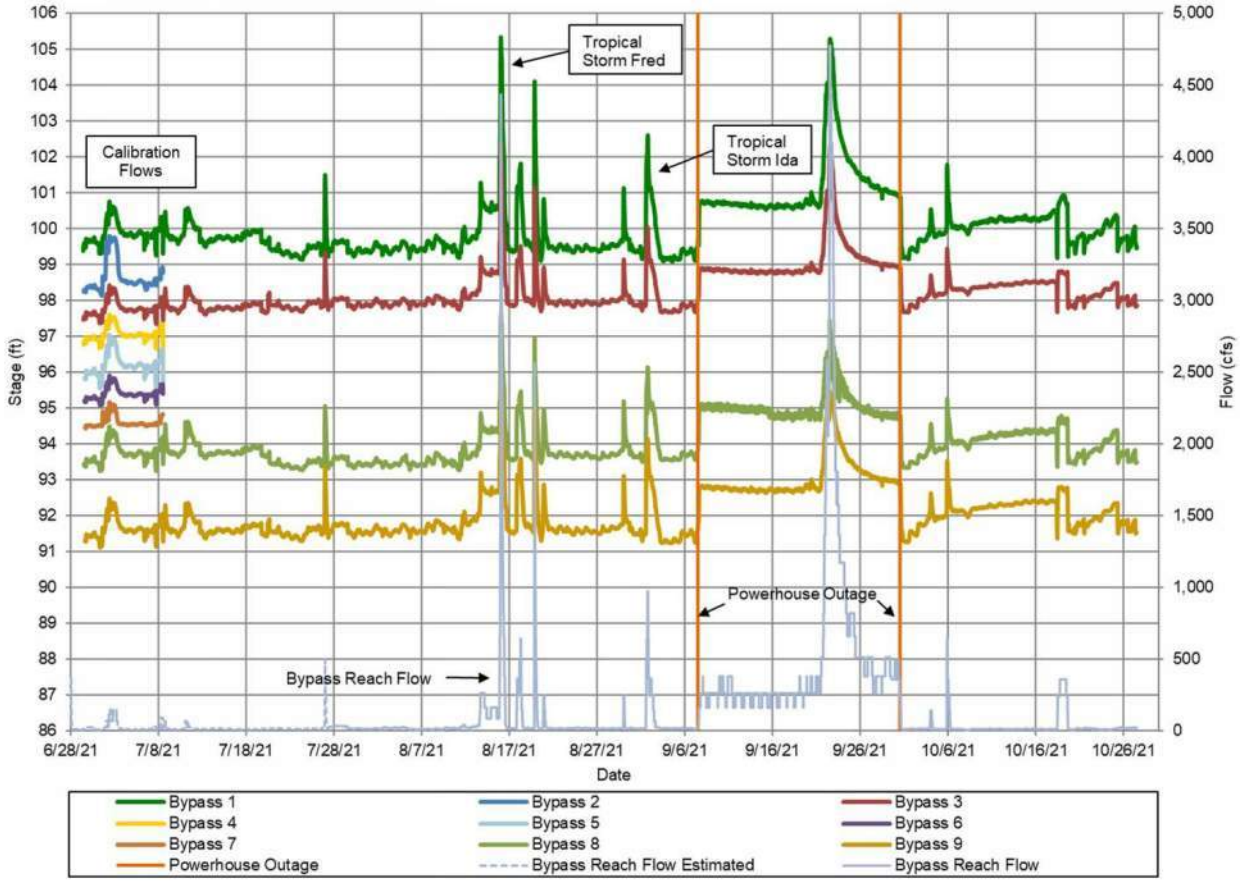
Niagara Bypass Reach Flows and Water Surface Elevations



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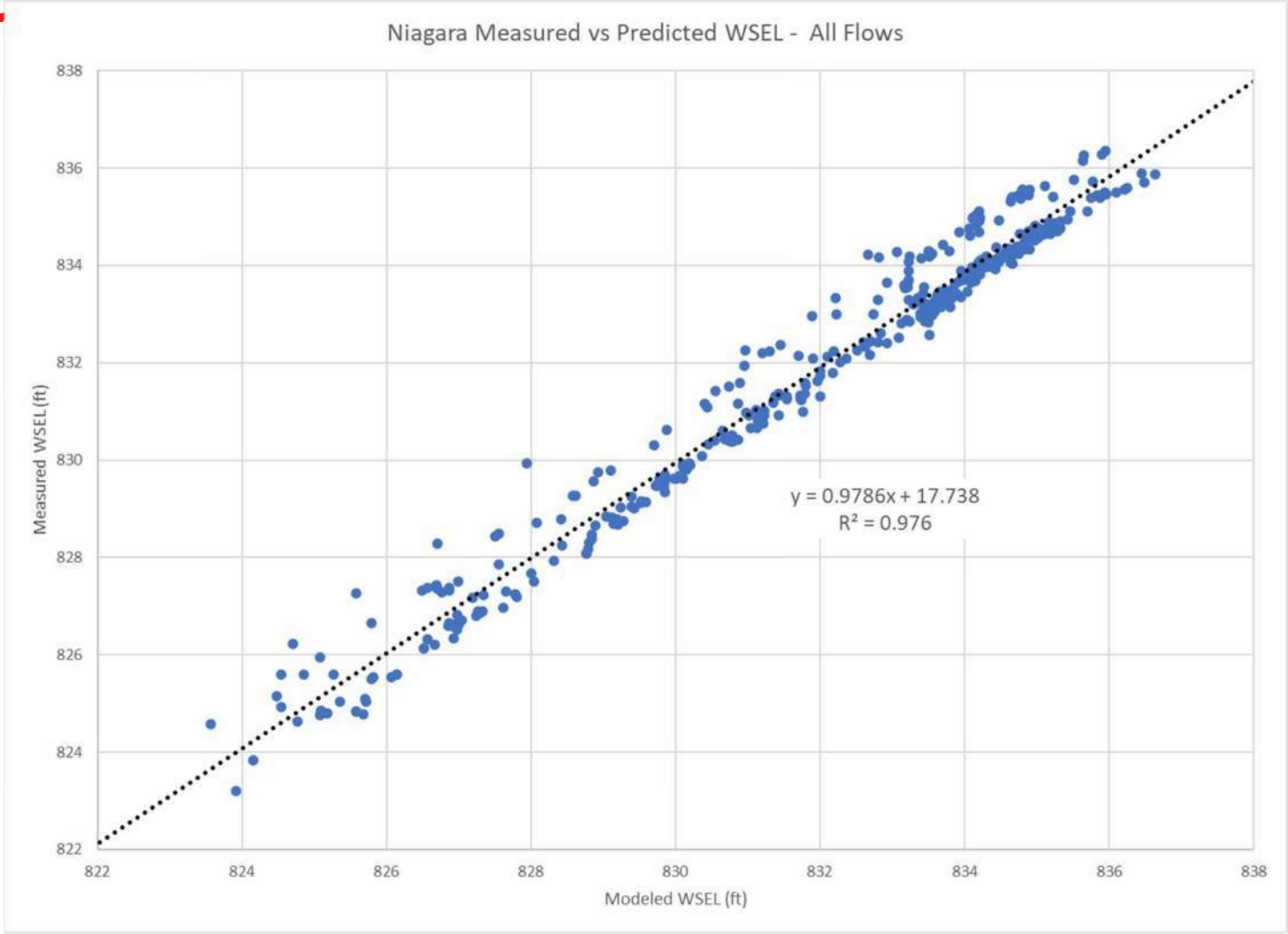
Niagara 2-D Hydraulic Model
Calibration Results – Water Surface Elevation



Niagara 2-D Hydraulic Model Calibration Results – Travel Time

Bypass Reach Flow	Level Logger Time (hr:min)	Model Time (hr:min)	Delta (hr:min)
Day 1 (Minimum)	N/A	N/A	N/A
Day 2 (Low)	0:33	0:46	+0:13
Day 3 (Mid)	0:34	0:34	+0:00
Day 4 (High)	0:16	0:15	-0:01

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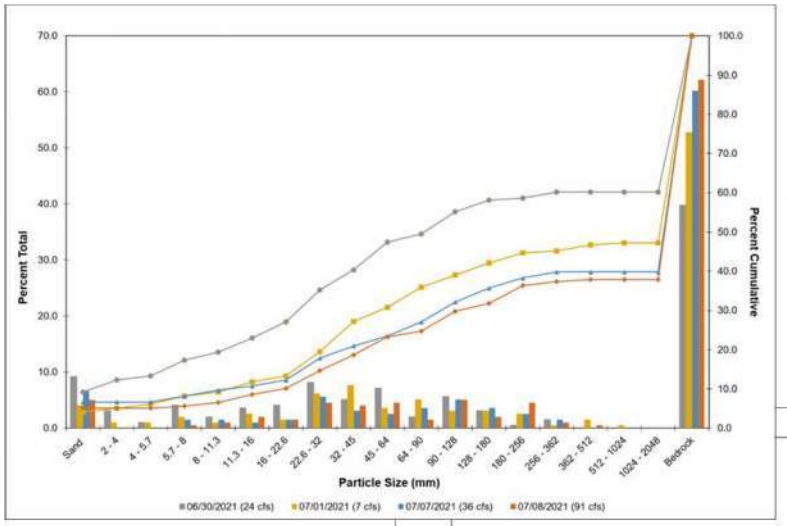
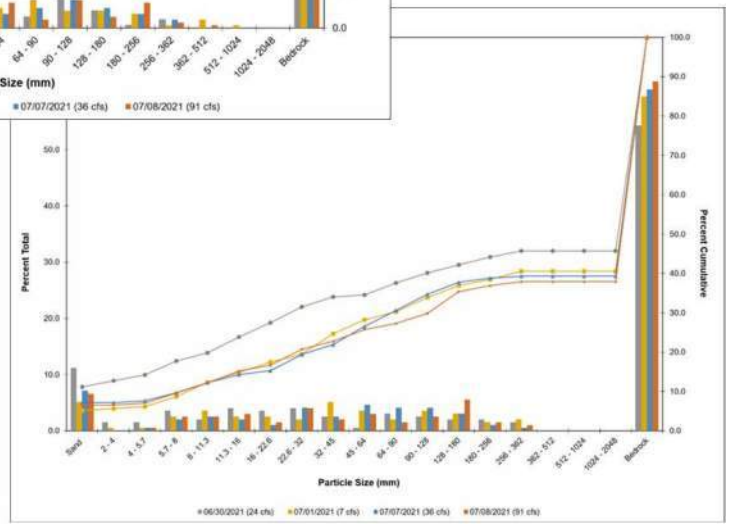
Particle Size Distribution Results



Upstream Transect

Downstream Transect



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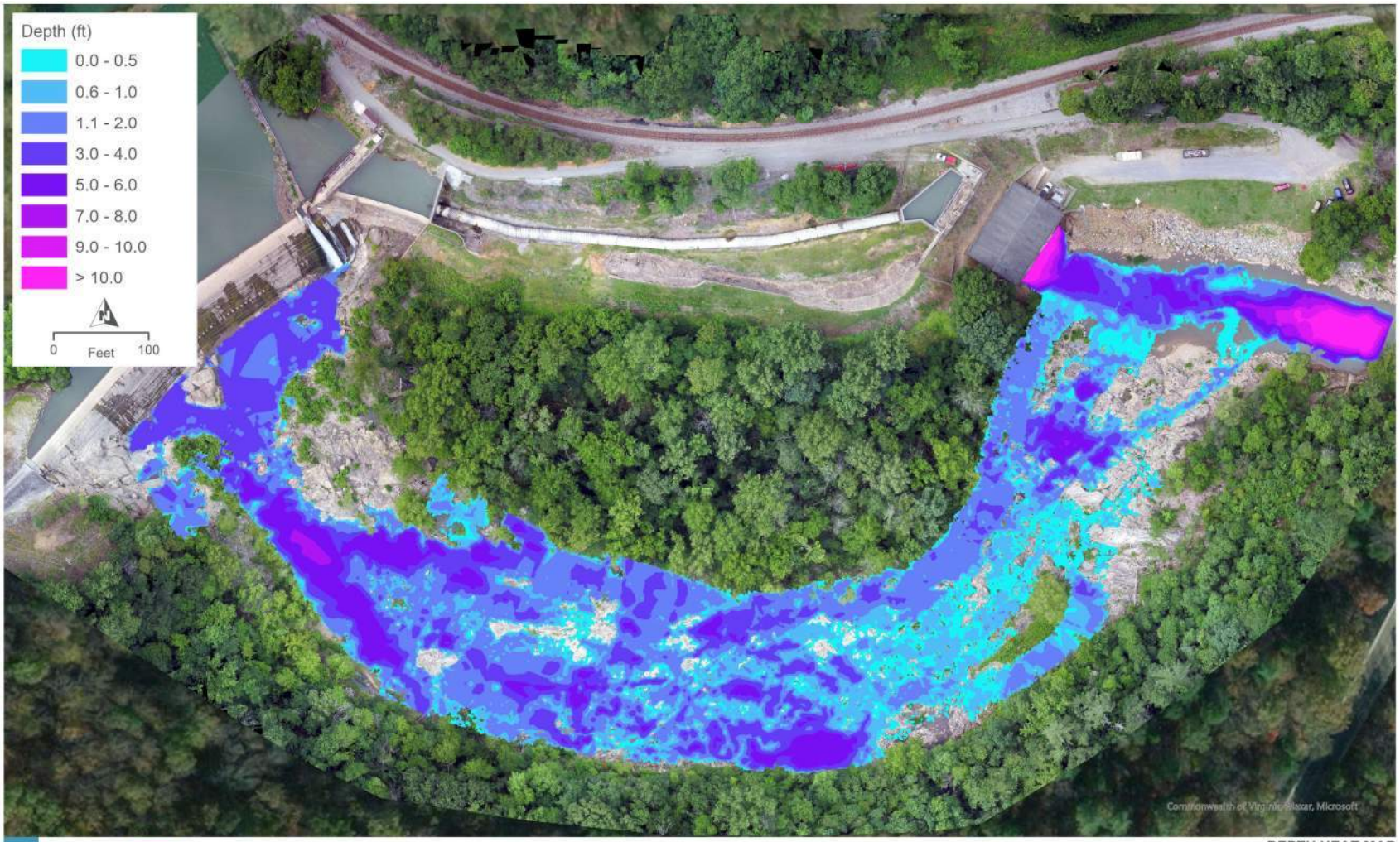
Niagara 2-D Hydraulic Model Calibration Results – Depth



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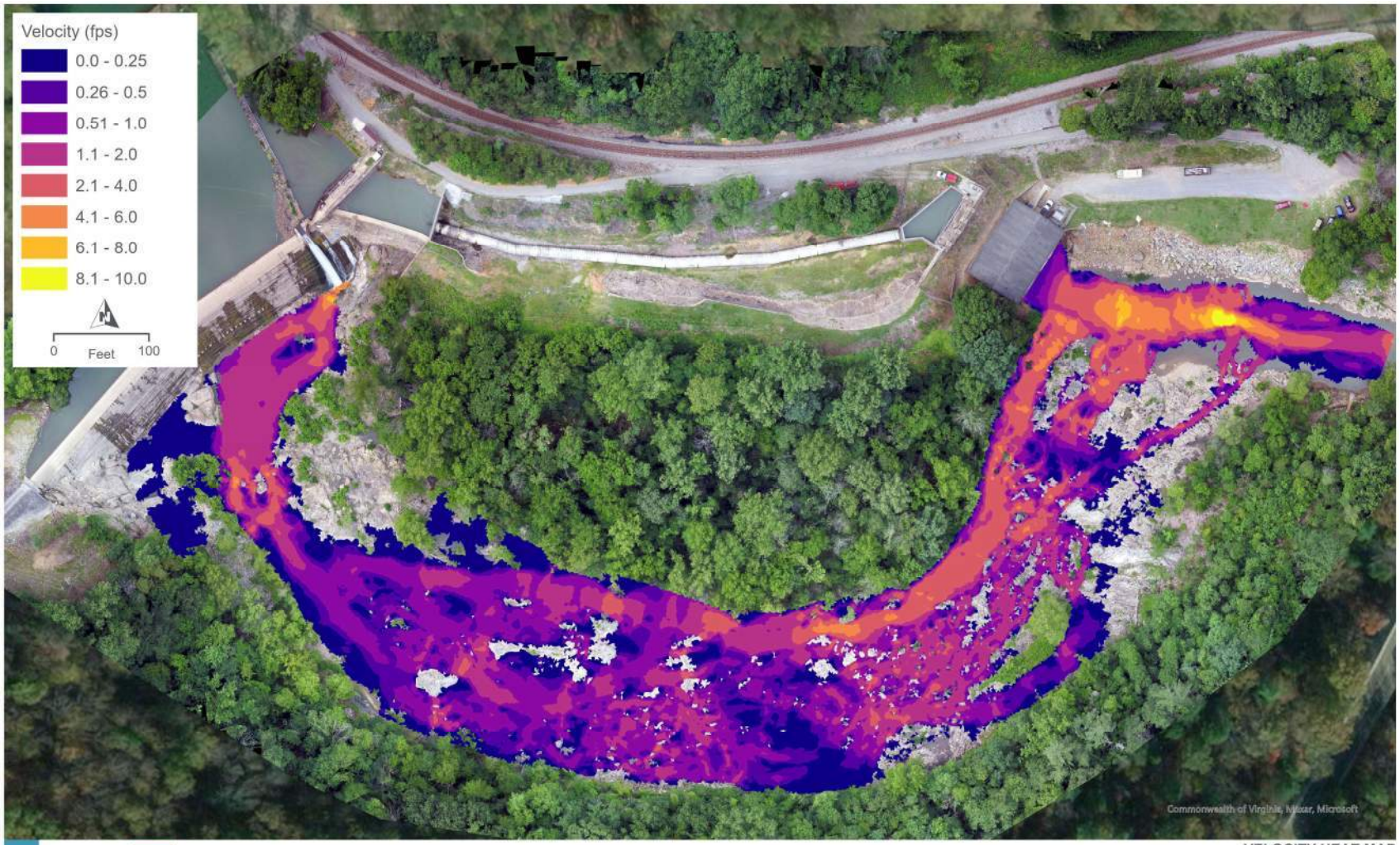
Niagara 2-D Hydraulic Model Calibration Results – Velocity



HDR AMERICAN ELECTRIC POWER

VELOCITY HEAT MAP

DAY 4. BYPASS: 91 CFS, GENERATION: 218 CFS

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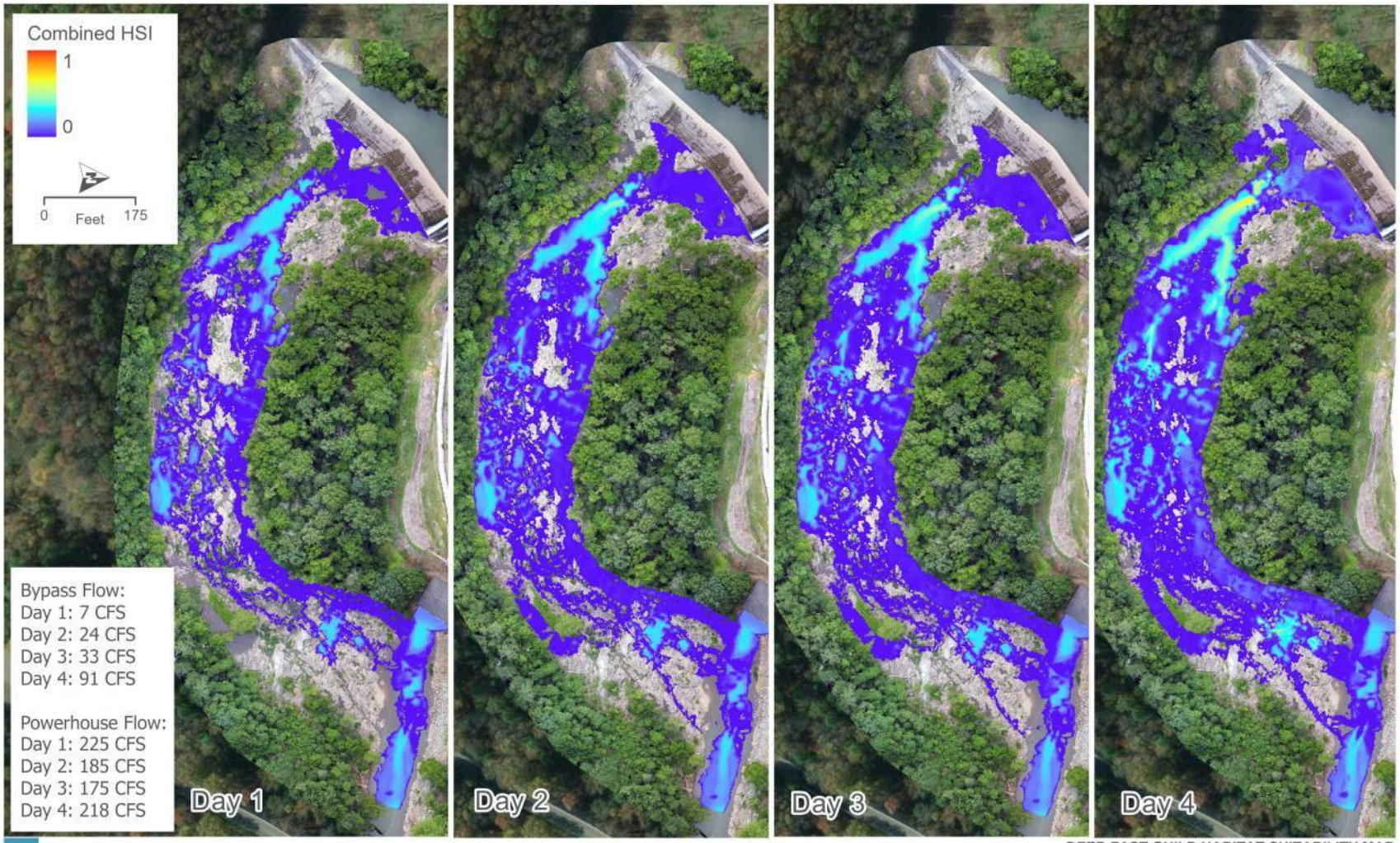
Habitat Results: Deep-Fast Guild



DEEP-FAST GUILD HABITAT SUITABILITY MAP

CATEGORY: COARSE-MIXED SUBSTRATE

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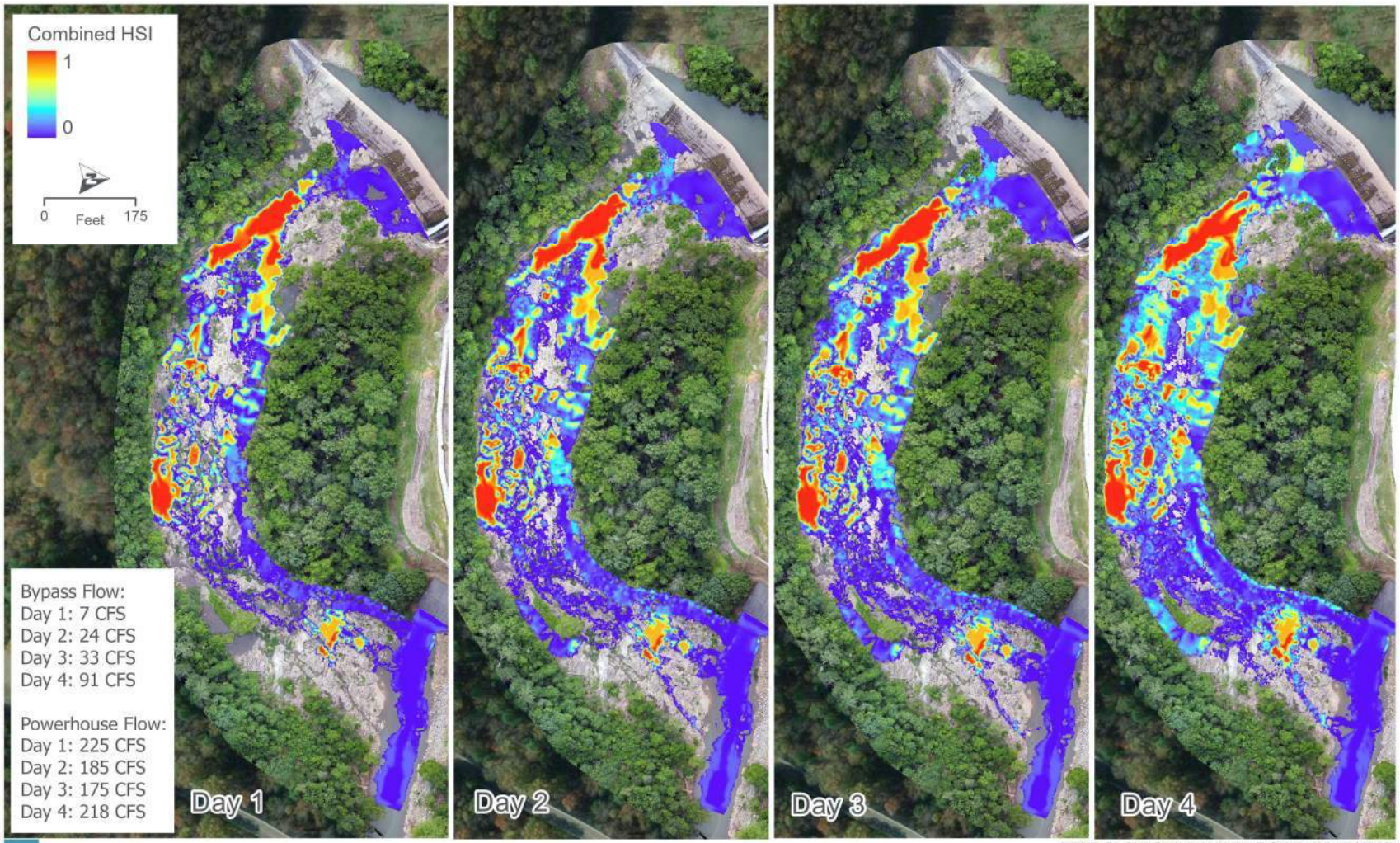
Habitat Results: Deep-Slow Guild



DEEP-SLOW GUILD HABITAT SUITABILITY MAP
CATEGORY: COVER

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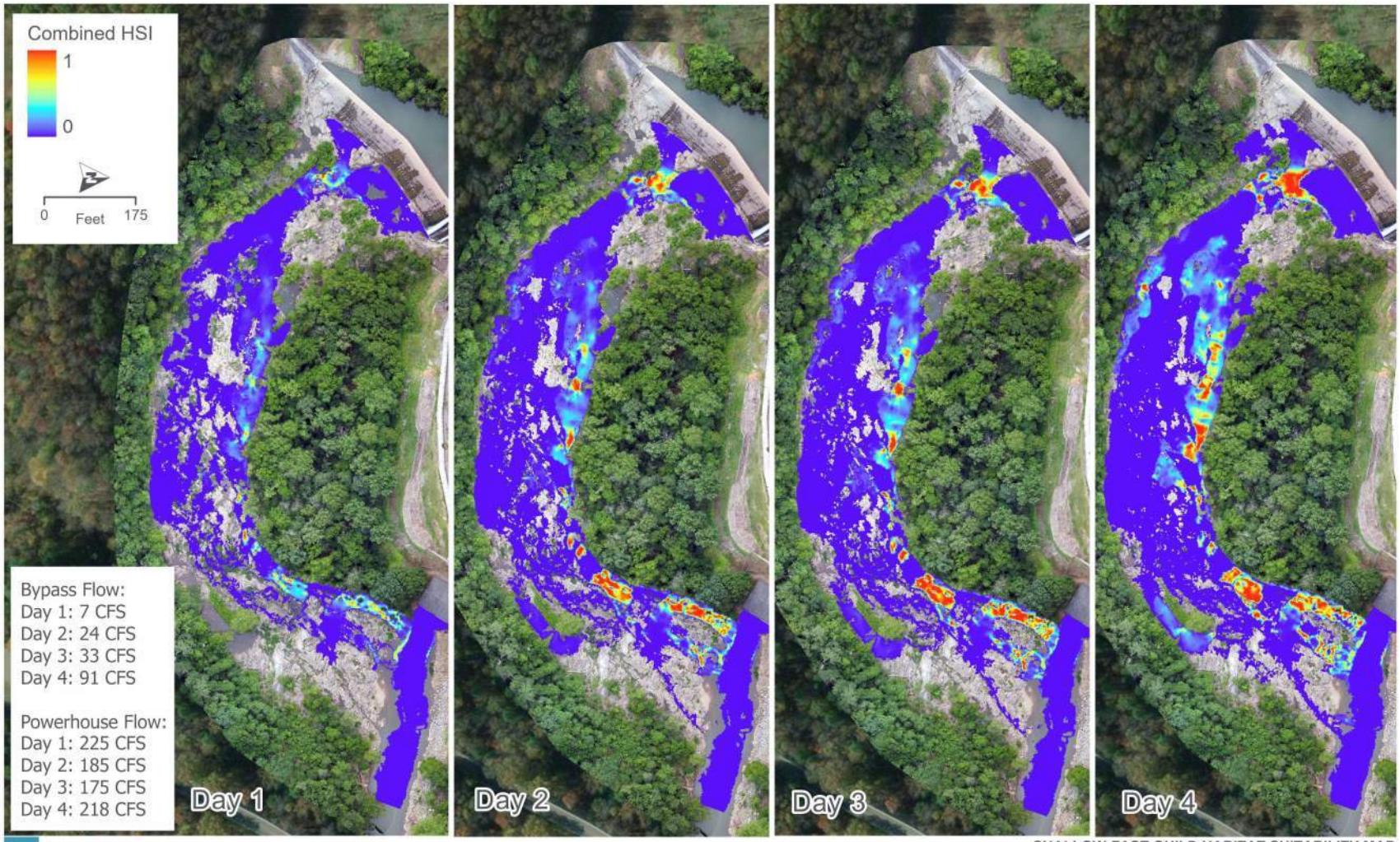
Habitat Results: Shallow-Fast Guild



SHALLOW-FAST GUILD HABITAT SUITABILITY MAP
CATEGORY: MODERATE VELOCITY WITH COARSE SUBSTRATE

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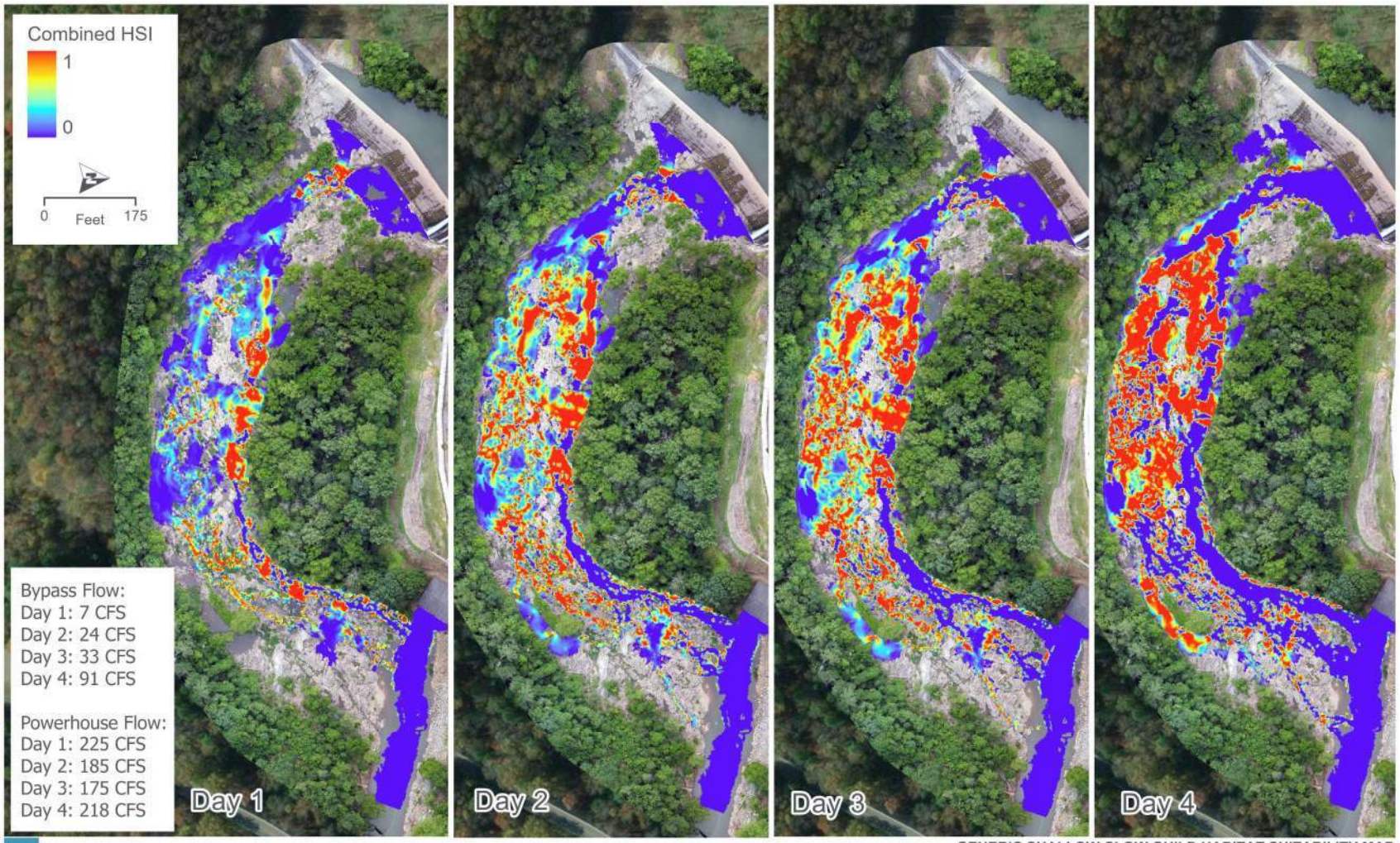
Habitat Results: Shallow-Slow Guild



GENERIC SHALLOW-SLOW GUILD HABITAT SUITABILITY MAP

CATEGORY: COARSE SUBSTRATE

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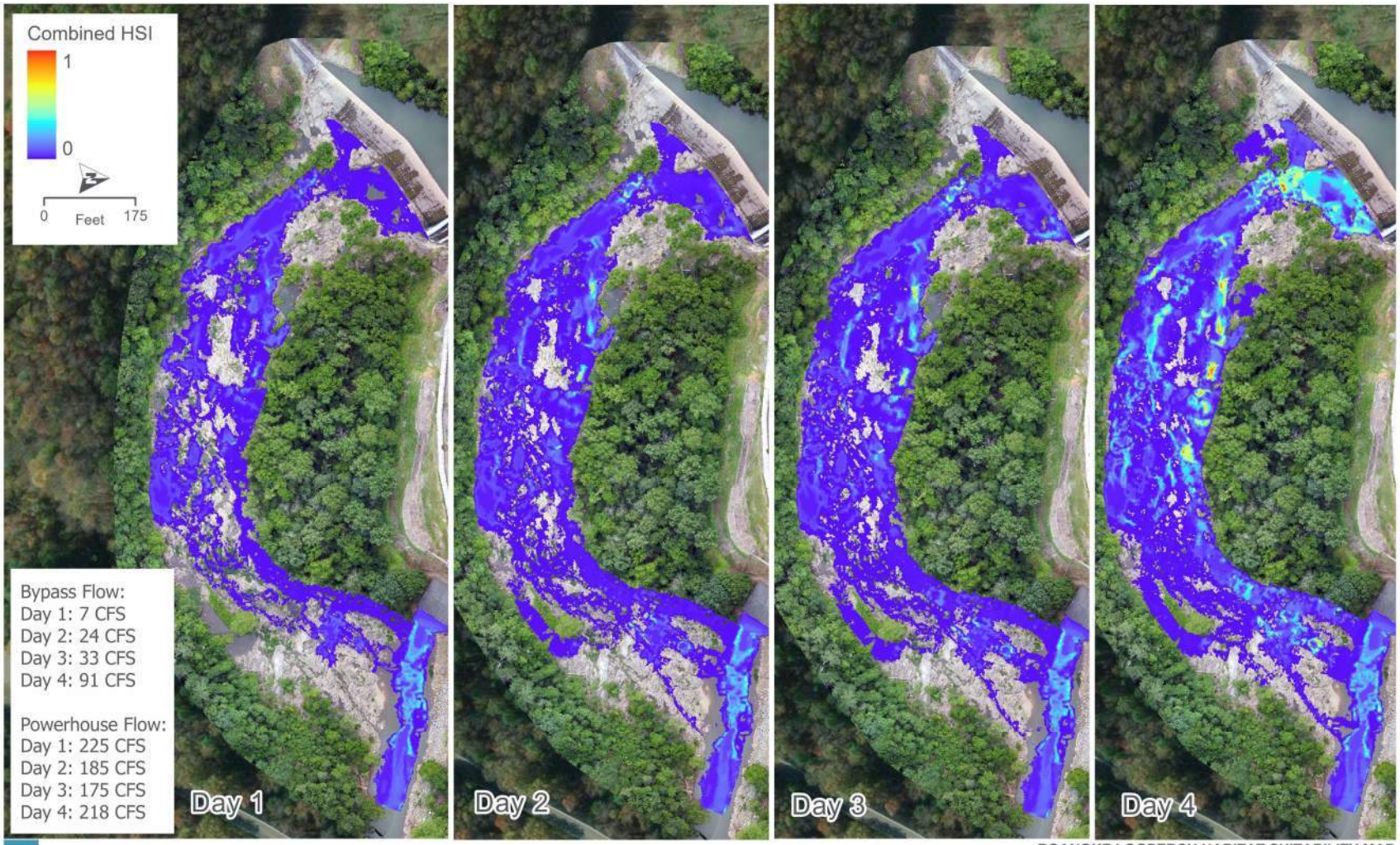
Habitat Results: RLP Adult



ROANOKE LOGPERCH HABITAT SUITABILITY MAP
LIFESTAGE: ADULT

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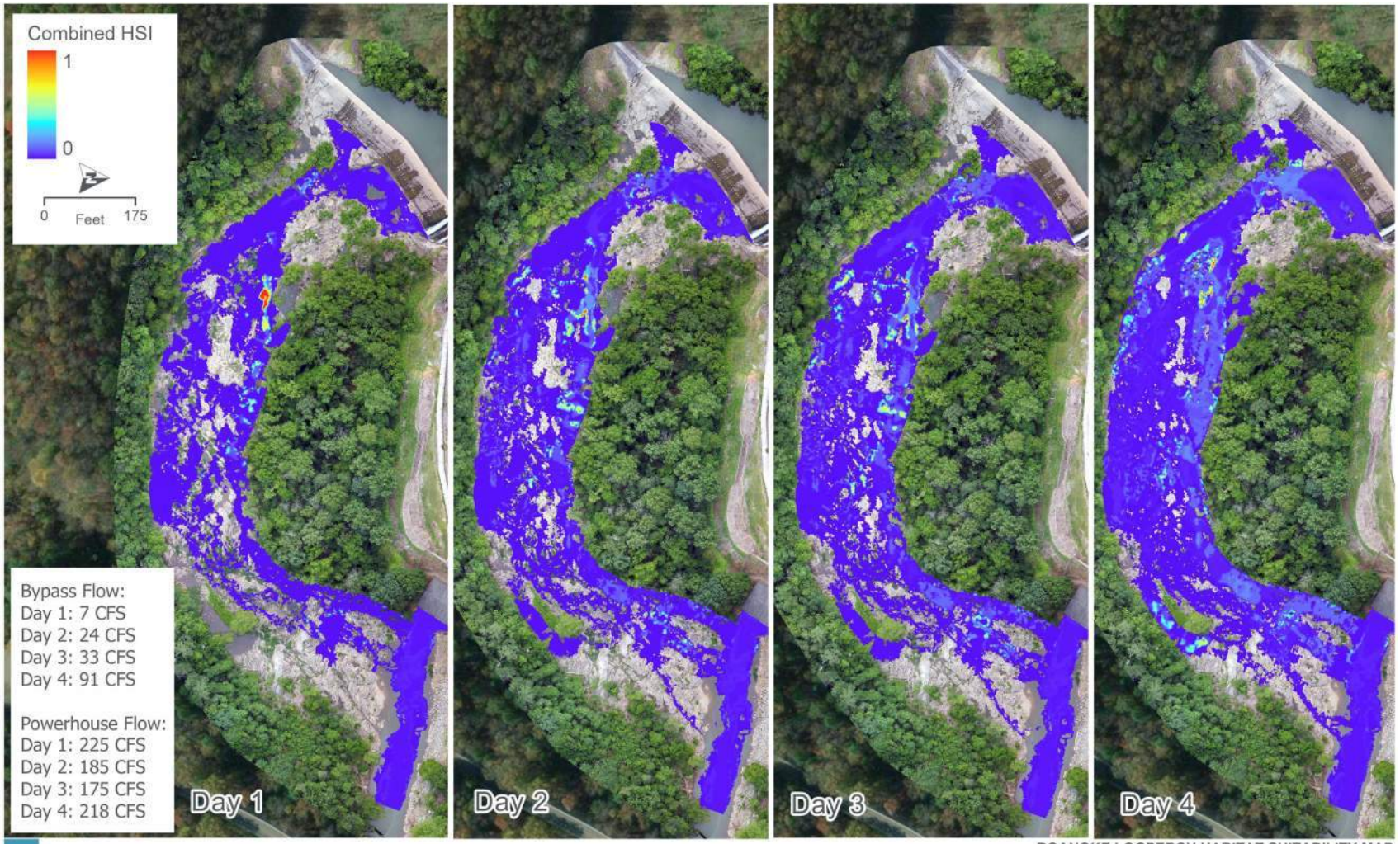
Habitat Results: RLP Subadult



ROANOKE LOGPERCH HABITAT SUITABILITY MAP
LIFESTAGE: SUBADULT

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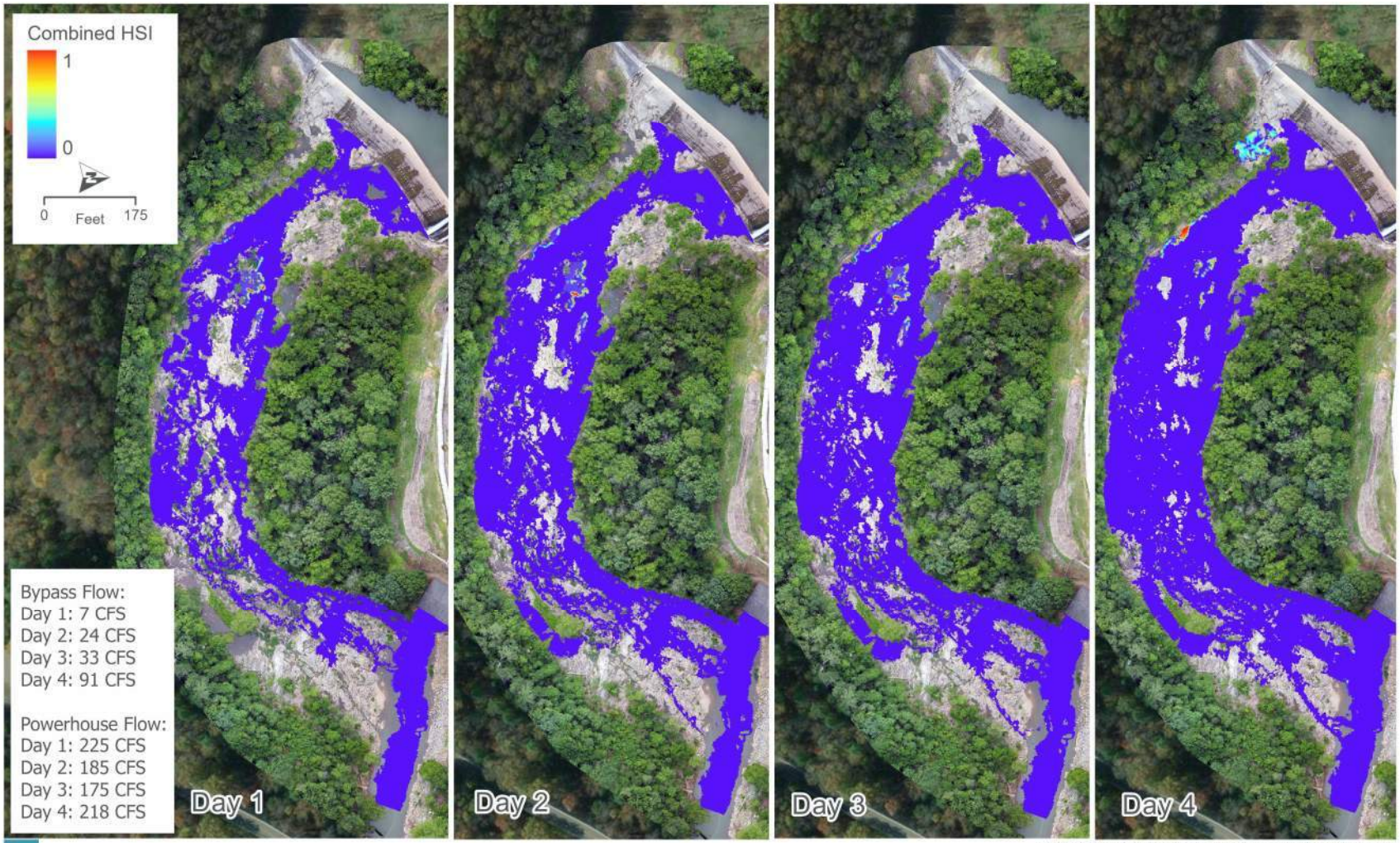
Habitat Results: RLP Young-of-Year



ROANOKE LOGPERCH HABITAT SUITABILITY MAP
LIFESTAGE: YOUNG-OF-YEAR

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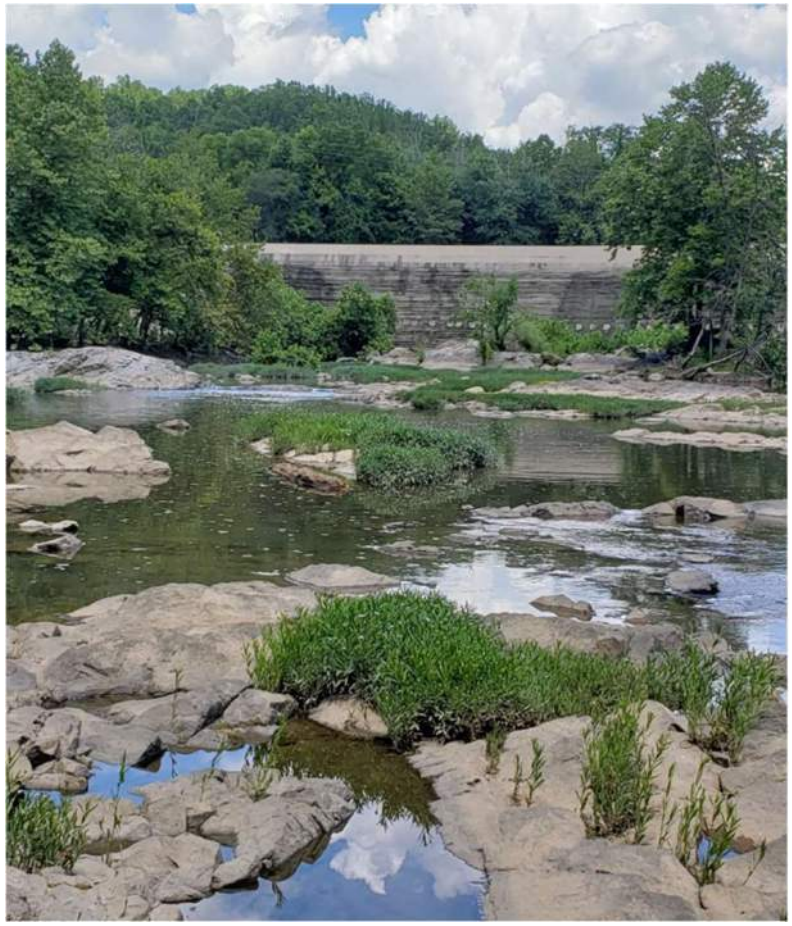
Niagara Bypass Reach Summary and Conclusions

- A variety of habitat types are available in the bypass reach including shoals, shallow and deep pools, riffles, and runs
- Substrate is dominated by larger particle sizes: cobble, boulders, and irregular bedrock
- Over the calibration flow range, bypass reach average depths increased approximately 0.5 ft and average velocities increased approximately 0.8 ft/s
- Travel times varied from approximately 35 min (low flow) to 16 min (high flow)



Niagara Bypass Reach 24 cfs 6.30.2021

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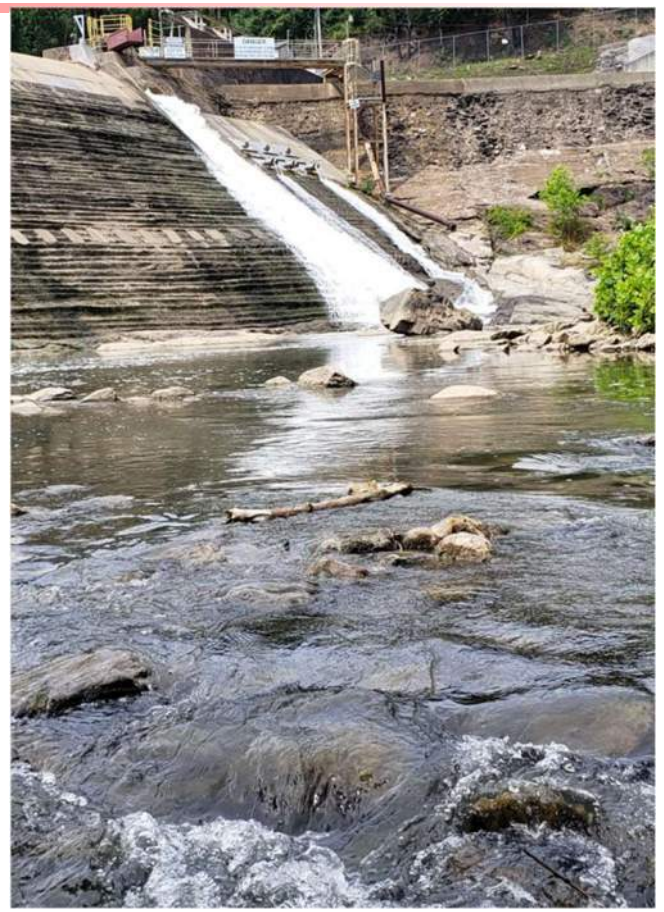
Niagara Bypass Reach Summary and Conclusions

- Habitat model results indicate suitable habitat for the four guilds and Roanoke Logperch stand alone target species under all four modeled flow scenarios
- Model results for species/life stages that prefer larger substrate sizes with cover generally had larger amounts of potential habitat available
- Potential available habitat generally increases as bypass flows increase with most of the incremental gain between the lowest modeled flow (7 cfs) and the two middle flows (24 – 33 cfs)



Niagara Spillway 24 cfs 6.30.2021

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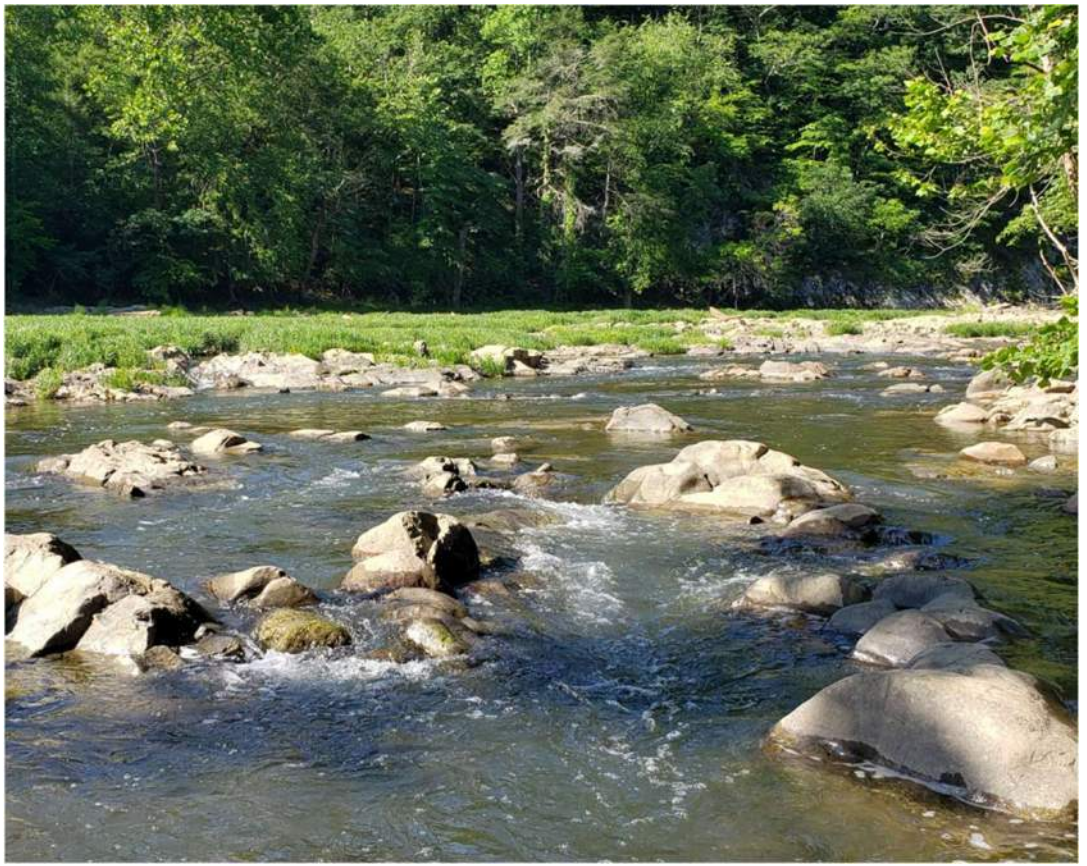
Niagara Bypass Reach Summary and Conclusions

- Model results for Roanoke Logperch indicate preferred habitat is primarily along the main flow path in the bypass reach, which is in agreement with data collected during 2021



Niagara Bypass Reach 24 cfs 6.30.2021

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Variances from FERC-approved Study Plan

The Bypass Reach Flow and Aquatic Habitat Study was conducted in conformance with the Commission's SPD.

Niagara Bypass Reach min flow 7.01.2021

ISR Meeting: Stakeholder Participation

- Appalachian will file USR Meeting Summary with FERC by December 29, 2022.
- Stakeholders should file USR meeting summary disagreements with FERC by January 28, 2022.
- Stakeholders File Comments on the DLA with FERC by December 30, 2021.
- Appalachian will file the Final License Application (FLA) on February 28, 2022.
- Stakeholders can contact Appalachian with questions or comments:

Jonathan Magalski
(614) 716-2240
jmmagalski@aep.com

Elizabeth Parcell
(540) 985-2441
ebparcell@aep.com

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Closing

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From: Kulpa, Sarah <Sarah.Kulpa@hdrinc.com>
Sent: Monday, December 27, 2021 12:09 PM
To: ACHP - John Eddins <jeddins@achp.gov>; Catawba Indian Nation - Wenonah Haire <caitlin.rogers@catawba.com>; County of Roanoke - David Henderson <dhenderson@roanokecountyva.gov>; County of Roanoke - Lindsay Webb <LWEBB@roanokecountyva.gov>; County of Roanoke - Michael Clark <Michael.Clark@roanokeva.gov>; County of Roanoke - Richard Caywood <rcaywood@roanokecountyva.gov>; Delaware Nation - Eric Paden <epaden@delawarenation-nsn.gov>; Friends of the Blue Ridge Parkway - Audrey Pearson <audrey_pearson@friendsbrp.org>; Friends of the Rivers of Virginia - Bill Tanger <riverdancer1943@gmail.com>; Harold Peterson <harold.peterson@bia.gov>; Kevin Colburn - American Whitewater (kevin@americanwhitewater.org) <kevin@americanwhitewater.org>; Monacan Indian Nation - Kenneth Branham <TribalOffice@MonacanNation.com>; NPS - Dawn Leonard <dawn_leonard@nps.gov>; Roanoke County Parks - Doug Blount <dblount@roanokecountyva.gov>; Roanoke Regional Partnership - Pete Eshelman <pete@roanoke.org>; Roanoke River Blueway <roanokeriverblueway@gmail.com>; Roanoke Valley Alleghany Regional Commission - Amanda McGee <amcgee@rvarc.org>; Roanoke Valley Greenways Commission - Frank Maguire <FMAGUIRE@roanokecountyva.gov>; Smith Mtn Lake Assn - John Rupnik <TheOffice@SMLAssociation.org>; Town of Vinton - Anita McMillan <amcmillan@vintonVA.gov>; Town of Vinton - Bo Herndon <wherndon@vintonVA.gov>; Town of Vinton - Kenny Sledd <ksledd@vintonVA.gov>; Town of Vinton - Nathan McClung <nmcclung@vintonVA.gov>; Tri-County Lakes Administrative Commission - Paula Shoffner <paulas@sml.us.com>; USEPA - Matthew Lee <lee.matthew@epa.gov>; USFWS <richard_mccorkle@fws.gov>; USFWS - John McCloskey <John_mcCloskey@fws.gov>; USGS - Mark Bennett <mrbennet@USGS.gov>; VA Cooperative Fish and Wildlife Research Unit - Paul Angermeier <biota@vt.edu>; VADCR - Natural Heritage <nhreview@dcr.virginia.gov>; VADCR - Robbie Ruhr <Robbie.Rhur@dcr.virginia.gov>; VADEQ - Andrew Hammond <andrew.hammond@deq.virginia.gov>; VADEQ - Anthony Cario <anthony.cario@deq.virginia.gov>; VADEQ - Brian McGurk <Brian.McGurk@deq.virginia.gov>; VADEQ - Matthew Link <matthew.link@deq.virginia.gov>; VADEQ - Scott Kudlas <scott.kudlas@deq.virginia.gov>; VADWR - Scott Smith <Scott.Smith@dwr.virginia.gov>; Virginia Council on Indians - Emma Williams <emma.williams@governor.virginia.gov>; Virginia Department of Conservation and Recreation - Rene Hypes <rene.hypes@dcr.virginia.gov>
Cc: 'ebparcell@aep.com' <ebparcell@aep.com>; Jonathan M Magalski <jmmagalski@aep.com>; Salazar, Maggie <Maggie.Salazar@hdrinc.com>
Subject: Niagara Hydroelectric Project (VA) -- Filing of Updated Study Report Meeting Summary

Niagara Hydroelectric Project Stakeholders:

Appalachian Power Company (Appalachian), a unit of American Electric Power (AEP), is the licensee, owner and operator of the Niagara Hydroelectric Project (FERC No. 2466) (Project) located on the Roanoke River in Roanoke County, Virginia. The Project is operated under a license issued by the Federal Energy Regulatory Commission (FERC). The existing FERC license for the Project expires on February 29, 2024. Appalachian is pursuing a new license for the continued operation of the Project in accordance with FERC's Integrated Licensing Process (ILP).

Pursuant to the ILP, Appalachian conducted a virtual Updated Study Report (USR) Meeting for the Project on December 14, 2021 and filed a summary of the meeting with FERC on December 27, 2021. The USR Meeting presentation was

included as an attachment to the USR Meeting summary. On behalf of Appalachian, we are notifying stakeholders of the availability of the USR Meeting summary and presentation. For your convenience, a copy of the cover letter for this filing is attached. Appalachian encourages stakeholders to view the complete filing online at FERC's eLibrary at eLibrary | File List (ferc.gov). Appalachian will also be adding the USR to the Project's public relicensing website (http://www.aephydro.com/HydroPlant/Niagara) in the coming days.

Should you have any questions regarding this filing, please contact Jon Magalski with AEP at (614) 716-2240 or jmmagalski@aep.com.

On behalf of AEP and the Niagara Project relicensing team, thank you for your participation in this process, and we hope you and your families are enjoying a safe and restful holiday season.

Sarah Kulpa
Project Manager

HDR
440 S. Church Street, Suite 900
Charlotte, NC 28202-2075
D 704.248.3620 **M** 315.415.8703
sarah.kulpa@hdrinc.com

hdrinc.com/follow-us

From: Jonathan M Magalski <jmmagalski@aep.com>
Sent: Monday, December 27, 2021 1:24 PM
To: riverdancer1943@gmail.com; Salazar, Maggie <Maggie.Salazar@hdrinc.com>
Subject: RE: [EXTERNAL] RE: AEP Niagara Hydroelectric Project - Updated Study Report Meeting

Hi Bill,

I'm sorry to hear you had issues connecting to the Webex and could not make the afternoon sessions. Please note that you have the opportunity to file comments on the USR. Stakeholder comments are due by January 28. You can view the updated study reports at Niagara Hydro Plant (aephydro.com). The USR meeting summary was filed this morning with FERC and will also be uploaded to the website in the coming days.

I hope you are enjoying the Holidays. Take care….Jon

From: riverdancer1943@gmail.com <riverdancer1943@gmail.com>
Sent: Tuesday, December 14, 2021 11:05 AM
To: 'Salazar, Maggie' <Maggie.Salazar@hdrinc.com>
Cc: Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] RE: AEP Niagara Hydroelectric Project - Updated Study Report Meeting

Well that sure was dysfunctional.
I have other conflicts this afternoon, so please note in your report that I was unable to access the meeting and hear any update.
Just got off a zoom meeting earlier and had no problems. Zoom.
--------- Bill

From: Salazar, Maggie
Sent: Tuesday, December 14, 2021 11:02 AM
To: riverdancer1943@gmail.com
Cc: Jonathan M Magalski <jmmagalski@aep.com>
Subject: RE: AEP Niagara Hydroelectric Project - Updated Study Report Meeting

Hi Bill – we're on a break until noon, so the meeting is not open. We were ahead of schedule this morning and covered Recreation already. You are welcome to join back in this afternoon and ask any Recreation questions at the end of the day.

Thanks,
Maggie

From: riverdancer1943@gmail.com
Sent: Tuesday, December 14, 2021 10:57 AM
To: Salazar, Maggie
Subject: RE: AEP Niagara Hydroelectric Project - Updated Study Report Meeting

Cannot access the zoom meeting. ---------- Bill Tanger, FORVA

-----Original Appointment-----
From: Salazar, Maggie
Sent: Friday, December 10, 2021 1:22 PM
To: riverdancer1943@gmail.com
Subject: AEP Niagara Hydroelectric Project - Updated Study Report Meeting
When: Tuesday, December 14, 2021 9:00 AM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: WebEx

Thank you for responding with your availability to attend the Niagara Updated Study Report (USR) Meeting. The WebEx meeting link and call in numbers are listed at the end of this meeting invitation. Additionally, the meeting agenda is included below. Participants are free to join the meeting in part based on interests or availability, but please note that the agenda is intended as an approximation and more or less time may be spent on individual studies, as needed. The USR meeting topics are currently scheduled for the following times:

Topic	Schedule*
Welcome and Introduction	9:00 AM – 9:10 AM
Shoreline Stability Study	9:10 AM – 9:35 AM
Wetlands, Riparian, and Littoral Habitat Study	9:35 AM – 10:00 AM
Cultural Resources Study	10:00 AM – 10:15 AM
Morning Break	10:15 AM – 10:30 AM
Recreation Study	10:30 AM – 11:30 AM
Lunch Break	11:30 AM – 12:00 PM
Fish Community Study • Fish Community • Roanoke Logperch Survey • Impingement and Entrainment • Benthic Aquatic Resources Study	12:00 PM – 1:15 PM
Water Quality Study	1:15 PM – 2:15 PM
Afternoon Break	2:15 PM – 2:30 PM
Bypass Reach Flow and Aquatic Habitat Study	2:30 PM – 3:30 PM
Discussion, Questions and Next Steps	3:30 PM – 4:00 PM

-- Do not delete or change any of the following text. --

When it's time, join your Webex meeting here.

ROANOKE COUNTY VA
GENERAL SERVICES & PARKS, RECREATION AND TOURISM

December 27, 2021

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Re: Niagara Hydroelectric Project (FERC No. 2466)
Review of Draft License Application and Updated Study Report
Submission of Comments from Roanoke County, Virginia

Dear Secretary Bose:

Roanoke County staff have reviewed the Draft License Application (hereinafter referred to as "DLA") dated October 1, 2021, prepared by HDR on behalf of Appalachian Power Company (hereinafter referred to as "Appalachian"), a unit of American Electric Power, for the Niagara Hydroelectric Project (Federal Energy Regulatory Commission No. 2466). Roanoke County staff also participated in the Updated Study Report (USR) virtual meeting held on December 14, 2021. Pursuant to 18 CFR § 5.16 (e) and 18 CFR § 5.15 (f), Roanoke County offers the following comments on the DLA and USR:

Importance of Outdoor Recreation

National

Outdoor recreation is one of the largest economic sectors in the United States. Each year, Americans spend hundreds of billions of dollars exploring the outdoors in a variety of ways, such as hiking, camping, hunting, fishing, canoeing, kayaking, picnicking, running, cycling, and scuba diving. Americans' passion for outdoor recreation supports the outdoor recreation economy, which accounts for $887 billion in annual consumer spending, contributes 7.6 million jobs to the U.S. economy, and generates $125 billion in federal, state and local tax revenue each year. Prior to the outbreak of the COVID-19 pandemic, the outdoor recreation economy accounted for 2.2 percent of the U.S. gross domestic product and was growing at a faster pace than the U.S. economy overall.[i]

State

Outdoor recreation contributes more than $21.9B to the economy, employs more than 197,000 people and is a key driver behind the Commonwealth's $26B tourism industry. Outdoor recreation creates $1.2 billion in state and local tax revenues, and it is a critical component to enhancing the quality of life and sense of place. Governor Northam created the Virginia Office of Outdoor Recreation in July 2019 as a result of the important contribution the industry plays in Virginia's economy, joining eleven other states that provide a central point of contact to promote and support the continued health of the outdoor recreation economy.[ii]

Over the past few decades, Virginia has seen a steady increase in the development of water trails, also referred to as blueways. The Virginia Department of Conservation and Recreation (DCR) is undergoing the update of the Virginia Outdoors Plan (VOP), which is the Statewide Comprehensive Outdoor Recreation Plan (SCORP) that provides policy direction for the assessment and management of natural, cultural, and recreational resources. The VOP identifies development of land

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1206 Kessler Mill Road • Salem, VA 24153
Office: (540) 387-6078 • Fax (540) 387-6146

and water trails as the third most needed activity in the 2017 Virginia Outdoors Demand Survey. Recommendations in the 2018 Virginia Outdoors Plan identify implementation of the Roanoke River Greenway Plan, Roanoke River Blueway Plan, Explore Park Adventure Plan, and in-river whitewater parks as projects of regional significance in the Roanoke Valley.

Regional

The Roanoke River is a significant outdoor recreational resource in Virginia's Blue Ridge, which includes the jurisdictions of Roanoke County, Roanoke City, and the Town of Vinton, that are located within and adjacent to the Niagara Project boundary. Roanoke has invested heavily in outdoor infrastructure and the vision of becoming an outdoor recreation destination is reflected in local and regional priorities. The Roanoke Valley-Alleghany Regional Comprehensive Economic Development Strategy (CEDS) was adopted on June 24, 2021. One of the regional goals includes: "Seek to maintain and promote the region's natural beauty as well as its cultural amenities and seek sustainable growth opportunities." One of the strategies listed to accomplish this goal is to "promote existing outdoor amenities including greenway networks, hiking trails, rivers, blueways, … to residents and external markets." The CEDS also lists continued development of the Roanoke River Blueway and improvements to Explore Park as priority projects.[iii]

The Roanoke River Blueway was formally established in 2013 by a committee of regional stakeholders. The Roanoke Valley-Alleghany Regional Commission hosts the Roanoke River Blueway Committee (RRBC) that meets bimonthly and includes representatives from local governments, AEP/Appalachian Power, National Park Service/Blue Ridge Parkway, tourism organizations, private businesses, and nonprofit and community organizations (e.g. Friends of the Rivers of Virginia, Pathfinders for Greenways, etc.). Regional efforts are underway to promote and enhance the Roanoke River Blueway. The Roanoke River Blueway received a Virginia Governor's Environmental Excellence Award (i.e., Silver Medal) for Implementation of the Virginia's Outdoor Plan in 2016. The Roanoke River Blueway was also deemed a Virginia Treasure by DCR in 2016. Roanoke County has recently invested over $50,000 in the development of a boat ramp at Wayside Park, which is also financially supported by the RRBC and Roanoke Outside.

The Roanoke Valley Greenway Commission was formed in 1997 by an Intergovernmental Agreement among the four local governments of the City of Roanoke, Roanoke County, the City of Salem and the Town of Vinton. The purpose of the Greenway Commission is to promote and facilitate coordinated direction and guidance in the planning, development, and maintenance of a system of greenways throughout the Roanoke Valley. The Roanoke Valley Greenway Plan was updated in 2018 and supports development of the Roanoke River Greenway as the region's number one priority.

Local

Enhancement of public access to the Roanoke River for outdoor recreation is a priority to Roanoke County, as demonstrated in the investment for development of the Roanoke River Greenway, Roanoke River Blueway, and Explore Park. The development of these facilities is helping meet the demands for increased outdoor recreational opportunities, enhancing connectivity to the Blue Ridge Parkway, and contributing to economic growth in the region. These recreational amenities are existing and proposed along the Roanoke River which passes through eastern Roanoke County and fall within or adjacent to both the Niagara (P-2466) and Smith Mountain (P-2210) hydroelectric project areas. It is critical that coordination continue between Appalachian, FERC, federal, state, and local governments, and other stakeholders support development of these recreational resources along the Roanoke River. Roanoke County values the existing partnership with Appalachian and looks forward

to future opportunities for collaboration.

Explore Park is an 1,100-acre facility focused on outdoor recreation and adventure destination located directly off the Blue Ridge Parkway that offers hiking trails, access to the Roanoke River, ziplines, camping, and other outdoor adventures. Explore Park is owned by the Virginia Recreational Facilities Authority (VRFA) and under a 99-year lease for operations and maintenance by Roanoke County. Under the Virginia Recreational Facilities Authority Act (§ 10.1-1601), the VRFA is a political subdivision of the Commonwealth that was created to provide (i) provide a high quality recreational attraction in the western part of the Commonwealth; (ii) expand the historical knowledge of adults and children; (iii) promote tourism and economic development in the Commonwealth; (iv) set aside and conserve scenic and natural areas along the Roanoke River and preserve open-space lands; and (v) enhance and expand research and educational programs.

Roanoke County is administering the design and construction of four federally funded alternative transportation projects that are proposed to extend the Roanoke River Greenway from Roanoke City, to the Blue Ridge Parkway, and Explore Park. Roanoke County requests Appalachian's continued support of the greenway (VDOT UPC No. 91191) proposed within and adjacent to the Niagara Dam Project Boundary, as FERC approval is required for non-project use of project lands and water to allow Appalachian to grant Roanoke County the right-of-way necessary to construct sections of the greenway in 2022-2023.

Protection, Mitigation, and Enhancement Measures Proposed by the Applicant, Resources Agencies, and/or Other Consulting Parties

As stated in Section E.6.2, Applicant's Proposal, Appalachian is not proposing any changes to its project facilities or project operation; however, it states that stakeholder consultation activities are ongoing and Appalachian is still evaluating measures that will be updated in the Final License Application (FLA). Roanoke County supports increased education and awareness efforts to better inform the public of the recreational opportunities allowed within the Niagara Project Boundary. Roanoke County requests to be included in any future stakeholder consultation activities related to outdoor recreation. In order to ensure that recreational use is monitored within the project boundary, Roanoke County requests that Appalachian consider conducting a Recreational Use Survey every six years in conjunction with its filing of the FERC Form 80 Recreation Report Survey to evaluate the adequacy of existing facilities and/or need for new or improved facilities.

As stated in Section E..11.3, "Appalachian expects to develop a Recreation Management Plan (RMP) that will provide an inventory of the Project recreation facilities and associated general maintenance measures", as well as "detail the proposed enhancements to the existing Portage Trail". Based on the USR meeting held on December 14, 2021, it is unclear when the RMP will be developed. Roanoke County requests that the completion of a RMP be a condition of the relicensing and that development of the RMP be coordinated with recreation stakeholders.

Roanoke County requests that proposed non-project recreational facilities be included in the FLA and RMP, such as the Roanoke River Greenway, Wolf Creek Greenway, Roanoke River Blueway, and Explore Park. These projects are proposed within or adjacent to the Project boundary and are publicly supported, as demonstrated in the Virginia Outdoors Plan, Roanoke Valley Greenway Plan, Roanoke County Strategic Plan, and the Explore Park Adventure Plan.

In accordance with Section E.11.3, Roanoke County acknowledges there are challenges with

developing a portage on the southside of the Roanoke River near the Niagara Dam, such as private land ownership and steep topography. Roanoke County continues negotiating with the property owners of Tax Parcel ID 071.03-01-13.01-0000 located at 3124 Highland Road for the right-of-way needed to develop recreational improvements such as the Roanoke River Greenway, Roanoke River Blueway, and expansion of Explore Park. Roanoke County would appreciate that Appalachian consider this parcel, as well as adjacent VRFA-owned parcels, in the RMP as a future opportunity to provide or enhance public access to the Niagara Project Boundary, should the right-of-way be acquired.

During the USR virtual meeting held on December 14, 2021, there was discussion that the Recreation Survey results indicated that the public is accessing the Niagara Project boundary from the community located north of the Roanoke River and from the Blue Ridge Parkway. The Niagara Project access road on the north side of the Roanoke River is gated and doesn't allow for public access. Roanoke County requests that Appalachian evaluate public access opportunities on the north side of the Roanoke River.

Existing Project Portage Trail Facility

As stated in Section A.1.1.2.1.1, Young Energy Services (YES) completed a *Recreation Facilities Inventory and Condition Assessment* describing existing conditions of the take-out as "poorly signed and difficult to use" and the put-in along the rocks as "somewhat difficult to use". The assessment concluded that "some signs are worn and faded and should be replaced". Section E.11.2.2 states that "Appalachian is evaluating concepts for improvements to the Portage Trail" and "during the course of the Recreation Study and development of the Project Boundary drawings, it came to Appalachian's attention that the portage put-in is actually located downstream extent of the Project Boundary" and "Appalachian will address this issue in the FLA".

Roanoke County supports improvements to the existing portage around the Niagara Dam. The take-out is difficult for paddlers to use, due to the steep banks, water depths, and debris accumulation on the stairs. Roanoke County requests that Appalachian consider the installation of a floating dock or platform with a ladder that would define the take-out location, allow for fluctuation with the river levels, provide a place to moor boats, and provide stability for paddlers climbing out of the water.

Roanoke County requests that Appalachian confirm the location of the portage put-in, as DLA Figure E.11-1 *Recreation Facilities Within and Adjacent to the Project Boundary* shows the portage put-in located within the project boundary. If the put-in location is determined to be outside of the Niagara Project Boundary, Roanoke County requests that Appalachian coordinate with the adjacent property owner (i.e., National Park Service/Blue Ridge Parkway) and the Roanoke River Blueway Committee for improvements that better define the put-in location and make it more user-friendly.

Roanoke County also requests that safety measures be considered to better educate and warn the public about the Niagara Dam Hydroelectric Project and the portage. Improvements such as relocating and updating the existing sign to direct boaters away from the dangerous spillway and replacing the faded boat barrier would be beneficial to the public.

Recreational Flow Release Desktop Review

Roanoke County appreciates that Appalachian's consultant performed a Recreational Flow Release Desktop evaluation to assess the potential for the Project operations to support short-term enhancement of flow conditions for downstream boating. Based on the DLA, the desktop study

concluded that the potential for the short-term enhancement of downstream flow conditions to support recreation activities would be most advantageous during the typically lower flow late-summer/early-fall months (i.e., July through October). Additionally, the study concluded that paddlers may benefit from a flow pulse between one hour and approximately 3.5 hours depending on the number of units generating and the available reservoir storage volume.

Roanoke County is disappointed that Appalachian is not proposing to include formal license provisions to augment recreational boating flows downstream of the Project, as this would require a departure from the normal run-of-river licensed operating mode, resulting in greater impoundment drawdown over a shorter period than would typically occur. Additionally, Appalachian states that drawing down the reservoir to its minimum required elevation would also present challenges for AEP operations to refill the reservoir to normal levels, depending on inflow conditions.

Roanoke County is proposing development of a publicly supported in-river whitewater park in Explore Park, which is located downstream of the Niagara Dam near the Smith Mountain Lake Project Boundary (P-2210). The Roanoke Regional Partnership commissioned a study in 2015 to investigate the feasibility of creating a whitewater park along the section of the Roanoke River that runs through Explore Park. The study found that river along Explore Park is largely composed of bedrock which, at lower levels, currently impedes the ability to easily float the river. At average peak flows, the whitewater features will be an attraction for beginner and intermediate boaters who'd like to practice surfing and basic whitewater maneuvers. At higher flows, the waves will grow in power and complexity and will become an attraction for more experienced boaters.

As the FLA and RMP are developed, Roanoke County requests that the Appalachian reconsider the potential for short-term, scheduled recreational releases in support of the Roanoke River Blueway and Explore Park. Controlled releases of the Niagara Dam in late summer or early fall would allow paddlers the ability to navigate this stretch of river during lower flow months and enhance the future in-river whitewater park. Additionally, controlled releases would also support a public-private partnership in Explore Park that has been developed between Roanoke County and Blue Mountain Adventures to provide camping, mountain bike rentals, and canoe, kayak, and tubing programs along the Roanoke River.

Trash/Debris Containment

As stated in the DLA and USR, current hydroelectric operations allow debris to overtop the spillway during high river flows, resulting in accumulations downstream of the Niagara Dam that negatively impact the Blue Ridge Parkway, Explore Park, and the Smith Mountain Lake hydroelectric project boundary (P-2210); however, Appalachian is not proposing to modify Project operations to collect non-organic debris that enters the Roanoke River upstream of the Niagara reservoir, as it is not practical. Roanoke County acknowledges that Appalachian did not generate this debris and that Appalachian spends a considerable amount of resources removing debris from the Niagara and Smith Mountain Lake project boundaries. Roanoke County, along with other regional stakeholders, have been organizing community volunteer work days to remove trash and debris along the Roanoke River. Roanoke County encourages Appalachian to continue evaluating trash and debris removal alternatives and support regional efforts to remove trash and debris from the Roanoke River.

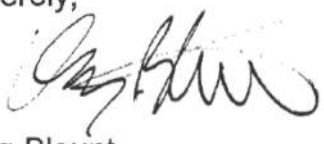
Closing

Roanoke County appreciates the opportunity to participate in the Niagara Dam relicensing and provide comments on the Draft License Application and the Updated Study Report. Our staff look forward to future opportunities to collaborate with Appalachian, FERC, and other recreation

stakeholders throughout the development of Final License Application and the Recreation Management Plan. Roanoke County is committed to development and enhancement of recreational opportunities along the Roanoke River, such as the Roanoke River Greenway, Roanoke River Blueway, and Explore Park.

Please forward any questions, comments, or concerns to Lindsay Webb, Roanoke County Department of General Services, Parks, Recreation and Tourism at lwebb@roanokecountyva.gov or (540) 777-6328.

Sincerely,



Doug Blount
Director of General Services, Parks, Recreation, and Tourism

cc: Richard Caywood, PE, Assistant County Administrator

[i] Outdoor Industry Association, The Outdoor Recreation Economy (2017) https://outdoorindustry.org/advocacy/2020-policy-platform/#_edn22, accessed December 22, 2021.
[ii] Virginia Governor Ralph S. Northam, https://www.governor.virginia.gov/outdoor/, accessed December 22, 2021.
[iii] "Roanoke Valley-Alleghany Regional Comprehensive Economic Development Strategy." Roanoke Valley-Alleghany Regional Commission. June 24, 2021. https://rvarc.org/wp-content/uploads/2021/06/2021_RVAR_CEDS_Annual_Update_2021_adopted.pdf, accessed December 22 2021.

COMMENTS FROM THE ROANOKE RIVER BLUEWAY COMMITTEE

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Re: Niagara Hydroelectric Project (FERC #2466), Review of Draft License Application, Roanoke County, VA

Dear Secretary Bose:

The Roanoke River Blueway Committee, staffed by the Roanoke Valley – Alleghany Regional Commission and made up of local Roanoke River stakeholders and four member governments, offers the following comments on the Draft License Application (DLA) dated October 1, 2021 for the Niagara Hydroelectric Project (Docket P-2466).

Project Relevance

The Niagara Hydroelectric Project (Project) is located within Roanoke County, a member government of the Roanoke Valley – Alleghany Regional Commission. The project also borders the Town of Vinton and is within six miles of the City of Roanoke, both also member governments of the Regional Commission and participants in the Roanoke River Blueway (Blueway) effort. The Roanoke River Blueway extends along the Roanoke River upstream until East Montgomery Park and downstream to the Hardy Ford access point which is owned and maintained by the Virginia Department of Game and Inland Fisheries (DGIF). The Blueway connects Roanoke County to the Cities of Salem and Roanoke and the Town of Vinton. Another major stakeholder is the Blue Ridge Parkway, which owns property in and around the Project and which has previously been a partner on Blueway access and greenway improvements. The Roanoke Valley Greenway Commission also has several planned projects that may be impacted by the Project and which will impact Blueway user experience.

Outdoor recreation and tourism are a major economic driver for the Roanoke Valley. Eleven percent of all visitors to the region come specifically to enjoy outdoor recreation amenities like the Blueway and the greenway network, according to the Virginia Tourism Corporation (VTC) Virginia Mountains Region Profile for FY2019. The Virginia Outdoors Plan identifies both the Roanoke River Greenway and the Blueway as regional priority projects. The Niagara Dam can be seen as an impediment to the average Blueway user, and the Roanoke River Blueway Committee supports any effort to improve the existing portage and to allow for increased access to this section of the river.

Specific Comments

Comments Concerning the Portage
The Roanoke River Blueway Committee supports improvements to the portage take-out, put-in, trail and signage.

On page E-104 of the DLA, the consultants for Appalachian Power (APCO) report that the take-out is "poorly signed and difficult to use." The Committee agrees with the assessment that the take-out is difficult to use. The Roanoke River Blueway would like to work with APCO to develop take-out improvements as part of the Management Plan for this Project.

Also on page E-104 the put-in is described as difficult to use. The Committee agrees with the assessment that the put-in is difficult to use. Additionally, the Updated Study Report (USR) notes that the put-in location may not be within the Project Boundary. The Roanoke River Blueway Committee sees a need for a more defined put-in location and improvements to that location. We would like to work with APCO to envision what that might look like. Should APCO determine that the ideal put-in location is outside of the Project Boundary, access through APCO's property and the Project on the part of local stakeholders and the National Park Service would still be required to make improvements to the put-in location, and should be included as a provision of the Management Plan.

Timelines and Management Plan Development
On page E-112 of the DLA APCO states: "The Recreation Management Plan will also detail the proposed enhancement to the existing Portage Trail by, at a minimum, adding signage and repairing or replacing faded signage, clearing vegetation and debris, and improving the quality of the existing trail (i.e., by potentially widening the trail and/or adding a more stable walking surface, and maintenance of the take-out stairs). APCO is presently evaluating options for improvement and enhancement of the portage and will present this proposal, along with the final results from the ongoing Recreation Study, in the FLA."

The Roanoke River Blueway Committee is concerned that no copy of the Recreation Management Plan to be submitted with the FLA has been made available for review. The Committee is not familiar with the proposals APCO plans to make in that document outside of the text included here. The Committee would prefer that APCO work directly with local stakeholders to develop this document.

Alignment of the Future Roanoke River Greenway
Page E-102 of the DLA should note that the current Roanoke River Greenway alignment to connect the City of Roanoke to Explore Park passes within the Project Boundary. This project is a high priority for the regional greenway network and for outdoor recreation in the region.

On page E-112 APCO states that they support "recreation stakeholders in their desired improvements to the Non-Project facilities (i.e. greenway development and additional regional initiatives) but [do] not propose to include improvements to Non-Project facilities in the relicensing proposal or Recreation Management Plan." The Roanoke River Blueway Committee feels that projects past a certain planning stage can and should be included in the Recreation Management Plan. Projects such as the Roanoke River Greenway have clear, planned alignments that impact the Project Boundary.

Recreational Release Study
While the Recreational Release was evaluated and the evaluation was included in the DLA, APCO has stated in this document that they do not wish to pursue this because of potential impacts to operations. However, development of an in-river kayak park is a key element of the Explore Park Master Plan. An in-river kayak park could generate as many as 15,000 trips a year according to an Economic Impact Study produced in Stoughton, Wisconsin, which would produce a significant boost to visits to the Explore Park and an accompanying boost in revenue. Development of this park may be negatively impacted by the low flow downriver of the dam. The Committee requests further clarification on the impacts of Recreational Releases on Project function, and that APCO reconsider releases for special events during low flow summer months.

Additional Comments
During the USR meeting on December 14, 2021 the consultant presented evidence that foot access from adjoining residential properties and the Blue Ridge Parkway was occurring on river left, the powerhouse

side of the river, within the Project Boundary. The Committee hopes that APCO will be amenable to further exploring this data and possible visitor use management efforts in the future.

Additionally, the Roanoke River Blueway Committee has made previous comments about the desire for collaboration with APCO in order to investigate potential trash removal programs in the future. Trash removal could have positive benefits to the Project. The Committee recognizes that APCO is not responsible for the trash in the river, but hopes that APCO will be amenable to working with the Blueway Committee and the Regional Commissions' member governments, as well as other stakeholders, when clean-up opportunities present themselves. It would be of great help to be able to access the Project area and the road into the Project Boundary in order to safely and efficiently remove trash from the reservoir and the spillway.

Closing
In summary, the Roanoke River Blueway Committee hopes that FERC and APCO will consider the numerous current and future recreation projects in this area as opportunities to improve collaboration between local stakeholders and APCO. The participation of APCO is key to the success of outdoor recreation in the region, which is a demonstrated economic driver.

Comments prepared by Regional Commission staff. Please forward any comments or concerns to Amanda McGee, Regional Planner III, at amcgee@rvarc.org or call 540-343-4417.

Respectfully,

The Roanoke River Blueway Committee

Roanoke River
BLUEWAY

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
December 29, 2021

OFFICE OF ENERGY PROJECTS

Project No. 2466-034 – Virginia
Niagara Hydroelectric Project
Appalachian Power Company

VIA FERC Service

Jonathan M. Magalski, Environmental Supervisor, Renewables
American Electric Power
1 Riverside Plaza
Columbus, OH 43215

Reference: Comments on Draft License Application

Dear Mr. Magalski:

Pursuant to 18 CFR § 5.16(c), this letter contains Commission staff's comments on Appalachian Power Company's (Appalachian's) October 1, 2021, draft license application (DLA) for the Niagara Hydroelectric Project. Our specific comments on the DLA are outlined in Appendix A. Please incorporate your response to comments on the DLA in the final license application (FLA).

The DLA does not contain a Supporting Design Report (SDR), as required by sections 4.61(e) and 4.41(g)(3) of the Commission's regulations. In Exhibit F of the DLA, Appalachian states that given the project has been inspected by an independent consultant within the past five years and an updated Potential Failure Modes Analysis Review Memo was filed with the Commission on March 1, 2021, in accordance with the Commission's Part 12 Dam Safety regulations, that further discussions regarding geological and subsurface investigations, hydrologic and hydraulic analyses, and stability analyses for all major structures will not be reiterated as part of an SDR. Although this statement is not an explicit request for a waiver of the requirement that Exhibit F contains an SDR, the statement implies that Appalachian does not intend to file an SDR with the FLA.

While we understand that your project is subject to the Commission's Part 12 requirements on an on-going basis, an SDR is a standard requirement for an FLA in accordance with sections 4.61(e) and 4.41(g)(3) of the Commission's regulations. Therefore, the SDR should be included in your FLA in accordance with the regulations.

If you have any questions, please contact Laurie Bauer at (202) 502-6519, or via e-mail at laurie.bauer@ferc.gov.

Sincerely,

Vince Yearick
Director
Division of Hydropower Licensing

Attachment: Appendix A – Comments on the Draft License Application

APPENDIX A
Comments on the Draft License Application

General

1. Sections 5.17(e) and 4.38(b)(2)(vi) of the Commission's regulations require that every application for a license for a project with a capacity of 80 megawatts or less must include in its application copies of statements of whether it is seeking benefits under section 210 of the Public Utilities Regulatory Policies Act of 1978 (PURPA). The draft license application (DLA) does not indicate whether Appalachian Power Company (Appalachian) is seeking PURPA benefits. Therefore, in the final license application (FLA), please indicate if benefits are being sought under 210 of PURPA; if so, provide the necessary documentation for doing so in accordance with section 4.38(b)(2)(vi) of the Commission's regulations.

Exhibit A

2. Page A-3 of Exhibit A describes the project's transmission facilities. However, Exhibit A does not provide the length of the transmission lines. Please provide this information in the FLA.

3. Table A.2-7 of Exhibit A shows monthly and annual flows at the project. The table contains flows for minimum, 90% exceedance, average, 10% exceedance, and maximum. However, median flows are not included in Table A.2-7. In order to calculate a dependable capacity for the project, please provide the monthly median flows at the project in the FLA.

Exhibit E

General

4. As previously requested in our March 5, 2021 comments on the Initial Study Report, please file with the FLA the geospatial data (e.g., exports from Global Positioning System (GPS) devices, or Geographic Information System (GIS) shapefiles), including the sampling locations, mesohabitat, substrate, and cover maps; shoreline habitat classifications; and any other GIS data layers that were created for the following studies: (1) Bypass Reach Flow and Aquatic Habitat Study; (2) Benthic Aquatic Resources Study; (3) Fish Community Study; (4) Water Quality Study; (5) Shoreline Stability Assessment Study; and (6) Wetlands, Riparian, and Littoral Habitat Characterization Study.

Water Use and Quality

5. Page E-25 of Exhibit E states that there are several water withdrawals and discharges in the project vicinity upstream of the project impoundment. In the FLA, please provide a map showing the locations of the water withdrawals and discharges.

6. Page E-25 of Exhibit E states that monthly average flows for the project over the term of the previous license ranged from 289 cubic feet per second (cfs) to 801 cfs. However, the monthly average flows range from 289 cfs in August to 853 cfs in February in Table E.8-1. Please clarify the discrepancy in the FLA.

Wetlands, Botanical, and Terrestrial Resources

7. Table E.10-1 in section E.10.1.3 of Exhibit E states that 27.25 acres of wetland habitat are present within the project boundary based on data from the National Wetlands Inventory (NWI). However, results from the Wetlands, Riparian, and Littoral Habitat Study presented in the Updated Study Report (USR) identified 61.36 total acres of wetland habitat in the project boundary based on NWI data. Additionally, the USR indicated that 12.45 acres of additional wetlands were identified in the field, beyond the NWI. In the FLA, please reconcile the discrepancy between these estimates and provide updated wetland acreages and mapping to reflect any changes.

8. As noted in item 2 above, Exhibit A does not include sufficient information on transmission lines. In providing such information in the FLA, please also explain how the project transmission line right of way is maintained and if any such activities could affect terrestrial resources or protected species.

Threatened and Endangered Species

9. Section E.10.1.6 of Exhibit E includes information on federally listed species from a 2017 correspondence with the U.S. Fish and Wildlife Service (FWS) but does not include a more recent review of federally listed species using FWS's Information for Planning and Consultation (IPaC) tool. Because such reviews need to be periodically updated to reflect potential listing of new threatened, endangered, or candidate species (e.g., monarch butterfly), please conduct an IPaC review for this project and include the results in the FLA.

Exhibit G

10. Section 4.61(f) of the Commission's regulations requires, in part, that an application includes an Exhibit G with a map or series of maps that complies with section 4.41(h) of the Commission's regulations. Section 4.41(h) requires project boundary data in a geo-referenced electronic format. However, no project boundary data in a geo-

referenced electronic format are provided in the DLA. Therefore, please provide this information in the FLA.

11. Section 4.39(a) of the Commission's regulations requires that Exhibit G maps and drawings be stamped by a registered land surveyor. The Exhibit G maps and drawings provided in the DLA lack a registered land surveyor's stamp.

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Dec 22, 2021

Secretary Kimberly D. Bose
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, DC 20426

Re: Niagara Hydroelectric Project (P-2466-034)

Dear Secretary Bose:

The Roanoke Valley Greenway Commission provided comments on the Scoping Document, the PAD, and the Preliminary Recreation Study Report for Niagara Hydroelectric Project, FERC No. 2466. We appreciate that some of our initial concerns were addressed in the final Recreation Study Report, but still feel that it falls short of the recreational needs of the Roanoke Valley and has too narrow a view of the project's impacts. In particular, the omission of proposed greenway projects as being outside the scope of the Recreation Study ignores that the member localities of the Greenway Commission have long been in conversation with Appalachian Power to implement the Roanoke River Greenway. Additionally, the efforts to create a Roanoke River Blueway are acknowledged in the regional overview in the summary of the study, but not how the Blueway's creation would impact the existing project recreational facility and the two non-project facilities (all included in the study area). The proposed development of a Recreational Management Plan (RMP) for the project would help address these issues, but it potentially may not occur until after the licensing renewal is completed in 2024. As the purpose of a RMP for the project would be to enhance public access, we request that the development and completion of an RMP be a condition of the relicensing of the Niagara Project.

Roanoke River Greenway

The Roanoke River Greenway, a thirty-plus mile corridor is planned from Montgomery County to Franklin County at Back Creek. During the study period, The Roanoke River Greenway sections that are completed saw unprecedented numbers of users. Although these increases were initially attributed to the restrictions required to contain the spread of the Covid -19, trail use counters show that the high level of use has continued. This reflects national participation trends in trail activities. Extending the Roanoke River Greenway as far as Rutrough Point will provide greater amenities to users, and will help alleviate crowding issues closer to the City of Roanoke.

The eastern section of Roanoke River Greenway in Roanoke County from the City line to Highland Road is within the Project boundary and has completed its engineer phase. The next section under the Blue Ridge Parkway has received

funding for construction and the portion within Explore Park to Back Creek is being designed. This extension of Roanoke River Greenway will dramatically increase recreation use within the Project area.

Roanoke County and AEP have been cooperating on coordination of Roanoke River Greenway construction. The completion of a RMP sooner rather than later will ensure that progress toward completing the Roanoke River Greenway will continue and are an acknowledgement that these facilities will enhance recreational use of the Project area.

Roanoke River Blueway

The proposed Roanoke River Blueway is an effort to improve recreational access along the Roanoke River at existing facilities, develop in-water play features and to provide consistent, welcoming wayfinding all along the corridor. More effective maps and consistent signage on the water will encourage paddlers to connect the different boat access points. In all, the goal is to encourage paddlers to explore more of the Roanoke River, while helping them to understand the value of improving the watershed. Any opportunity to lengthen the time people spend on the water is a chance to meet that goal.

The Recreational Study Report demonstrates the need for the Blueway effort. Few of the paddlers who were interviewed for the study understood that there was a portage around the spillway and the author of the study notes that the signage at the portage is substandard and that the put in is not well defined. In river signage coupled with an improved, defined portage route will improve the user experience and increase the overall participation numbers.

Litter and Debris

We also acknowledge that the debris and trash that collects on the boat boom before the spillway was not created by AEP, but because it is most visible at this point, it is seen by the general public as AEP's problem. AEP has an opportunity to facilitate a discussion with various regional stakeholders to come up with solutions for this issue. We would like to see included in the re-licensing agreement a commitment from AEP to provide access to the project site for a discussion of what can be done rather than allowing the debris to move further downstream. We are confident that the departments responsible for stormwater management at the city and county of Roanoke would be eager to engage with AEP to develop an acceptable plan to begin to address the issues.

In closing, we would ask that AEP commit to the following steps as a part of the re-licensing process:

a. Start the work to develop a Recreational Management Plan that will be completed prior to when the renewed license is issued.

b. Provide Roanoke County with right-of-way for Roanoke River Greenway on river right on AEP land.

c.

d. Work with the localities to provide debris removal at the dam and sponsor periodic clean ups of trash in the Project Area.

I look forward to continuing the dialogue with the project team and other stakeholders to improve the recreational access in the area. Thank you for the opportunity to provide comments at this point.

Sincerely,

Frank Maguire
Roanoke Valley Greenway Coordinator
1206 Kessler Mill Road, Salem, VA 24153
540-777-6330
fmaguire@roanokecountyva.gov

ROANOKE REGIONAL PARTNERSHIP

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December 30, 2021

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Re: Niagara Hydroelectric Project (FERC No. 2466)
Review of Draft License Application and Updated Study Report
Submission of Comments from Roanoke Regional Partnership

Dear Secretary Bose:

Roanoke Regional Partnership provided comments on the Preliminary Recreation Study Report for Niagara Hydroelectric Project, FERC No. 2466 in support of our community stakeholders including Roanoke County, City of Roanoke, Town of Vinton, Roanoke Valley Alleghany Regional Commission, and Roanoke Valley Greenway Commission. Although some of the initial concerns shared were addressed in the final Recreation Study Report, we still feel that it falls short of the recreational needs of our community.

The Roanoke Regional Partnership is the regional economic development organization representing eight local governments throughout the Roanoke region of Virginia. Since 2009 these local governments and private business investors have recognized the natural assets as a community strength and have been strategically investing in the development of an outdoor economy focused on business investment, talent attraction, and tourism.

The Roanoke River is at the heart of the region and the relicensing of Niagara Dam represents a unique opportunity to further leverage recreational opportunities as they relate to the Roanoke River Greenway, Explore Park, Blue Ridge Parkway, and outdoor recreation sports such as fishing and paddling.

We fully support the formal comments submitted by Roanoke County, City of Roanoke, Town of Vinton, Roanoke Valley Alleghany Regional Commission, and Roanoke Valley Greenway Commission and encourage you to adopt and implement their requests.

Key requests we would like to draw your attention to include:

- Request that the development of a Recreation Management Plan be a requirement, not just a recommendation, in the issuance of the new relicense.

- Request Appalachian reconsider the potential for short-term, scheduled recreational water releases. Controlled releases of the Niagara Dam in late summer and early fall would allow paddlers the ability to navigate this stretch of river during lower flow months and enhance the future in-river whitewater park. Controlled releases would also support a public-private partnership in Explore Park that has been developed between Roanoke County and Blue Mountain Adventures to provide camping, mountain bike rentals, and canoe, kayak, and tubing programs along the Roanoke River.

- Requested improvements to the existing portage trail around the dam, specifically the take-out and put-in. Request a portage on the north side of the river be evaluated.

- Request Appalachian implement trash and debris removal alternatives and support regional efforts. Current procedure is to push debris over the dam, so it becomes someone else's problem.

- Request Appalachian continue support of the greenway (VDOT UPC No. 91191) proposed within and adjacent to the Niagara Dam Project Boundary, as FERC approval is required for non-project use of project lands and water to allow Appalachian to grant Roanoke County the right-of-way necessary to construct sections of the greenway in 2022-2023.

Roanoke Regional Partnership appreciates the opportunity to participate in the Niagara Dam relicensing and provide comments on the Draft License Application and the Updated Study Report.

Sincerely,

Pete Eshelman
Director of Outdoor Branding

Ann Jennings
Secretary of Natural Resources

COMMONWEALTH of VIRGINIA

Department of Wildlife Resources

Ryan J. Brown
Executive Director

Forest Regional Office
1132 Thomas Jefferson Rd.
Forest, VA 24551
30 December, 2021

Kimberly Bose
Secretary, Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: Comments on Draft License Application for the Niagara Hydroelectric Project (FERC No. P-2466)

Dear Ms. Bose:

The Virginia Dept. of Wildlife Resources (VDWR) appreciates the opportunity to provide comments on the Draft License Application (DLA) submitted by American Electric Power (Applicant) regarding the Niagara Hydroelectric Project (No. 2466). The VDWR is the state agency responsible for managing wildlife resources in Virginia.

We have reviewed the DLA, as well as comments submitted by the US Fish and Wildlife Service (USFWS). We concur with those comments submitted by USFWS regarding this project. We agree that certain aspects of this project are incomplete, pending the results of planned studies (e.g., Roanoke Logperch *Percina rex* larval sampling and full analyses of the Bypass Reach instream flow studies). As a result, we are unable to offer relevant comments regarding recommended flow regimes for the Bypass Reach or fish entrainment/impingement impacts at this time. Those comments will be forthcoming once all the studies and analyses have been completed.

In general, we commend the Applicant and their Agents for conducting a very transparent and responsive process. All issues raised by stakeholders appear to have been considered and discussed. Many of the issues raised during the course of this relicensing have been satisfactorily resolved.

As noted previously, we will withhold comments regarding Bypass Reach flow regimes and entrainment/impingement impacts pending the completion of additional studies and analyses. This would also apply to potential project impacts on Roanoke Logperch. However, we would agree with USFWS that some additional mitigation measures benefitting Roanoke Logperch may be appropriate as part of the Final License Application.

We would disagree with the Applicant's statement that "...**existing Project and Non-Project recreation facilities and public access to the Project are sufficient to meet current recreational demand.**" It appears that recreational demand for water access to the Roanoke River in this area is generally high, as one might expect given the population density in the area. We do agree with the Applicant that practicable recreational enhancement options in the immediate project vicinity are extremely limited. Given this, we would suggest that the Applicant may want to explore options for working with Stakeholders to enhance recreational opportunities on segments of the Roanoke River outside of the immediate project area, in order to mitigate for lost opportunities associated with project operations and development. Such options could include assisting localities and other Stakeholders with Greenway/Blueway enhancements or expansions to meet the high demand for Roanoke River access in the area.

We greatly appreciate the opportunity to provide comments regarding the DLA. Should there be any questions, or if additional information is needed, please contact me at scott.smith@dwr.virginia.gov .

Sincerely,

Scott M. Smith
Regional Fisheries Manager – VDWR

CC: Amy Martin VDWR
Mike Pinder VDWR
Dan Wilson VDWR
Jeff Trollinger VDWR
John McCloskey USFWS
Rick McCorkle USFWS
Sarah Kulpa HDR
Jon Magalski AEP

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
January 27, 2022

OFFICE OF ENERGY PROJECTS

Project No. 2466-034 – Virginia
Niagara Hydroelectric Project
Appalachian Power Company

VIA FERC Service

Jonathan M. Magalski, Environmental Supervisor, Renewables
American Electric Power
1 Riverside Plaza
Columbus, OH 43215

Reference: Comments on Updated Study Report and Meeting Summary

Dear Mr. Magalski:

On December 6, 2021, Appalachian Power Company (Appalachian) filed the Updated Study Report (USR) for the Niagara Hydroelectric Project (Niagara Project) describing Appalachian's overall progress in implementing the approved study plans. On December 14, 2021, Appalachian held a meeting on the USR. On December 27, 2021, Appalachian filed its Updated Study Report Meeting Summary (Meeting Summary).

We have reviewed the USR and the Meeting Summary and provide our comments in Appendix A, pursuant to 18 CFR § 5.15(f). Unless otherwise noted, please provide your responses to Commission staff's comments by March 5, 2022, which is the due date identified in the approved process plan[1] for providing responses to any disputes or requests to amend the study plan(s), and also applies to responses to stakeholder comments on the USR.

[1] See Appendix B of Scoping Document 3 issued on December 22, 2020.

If you have any questions, please contact Laurie Bauer at (202) 502-6519, or via e-mail at laurie.bauer@ferc.gov.

Sincerely,

John B. Smith, Chief
Mid-Atlantic Branch
Division of Hydropower Licensing

Attachment: Appendix A – Comments on the Updated Study Report and Meeting Summary

APPENDIX A
Comments on the Updated Study Report and Meeting Summary

Water Quality Study

1. Continuously recorded (15-minute) water temperature and dissolved oxygen (DO) data from each monitoring location during the 2020 and 2021 water quality monitoring seasons are presented graphically in Attachment 1 of the Water Quality Study Report filed with the Updated Study Report (USR). However, it is difficult to ascertain from these graphs the number of days that DO values were inconsistent with state water quality standards in the forebay and bypassed reach in 2020 and 2021, respectively. Therefore, to assist staff's analysis of project effects on water quality, please provide the tables, or a spreadsheet file, that reports for each day, the daily minimum, maximum, and average DO values at the continuous water quality monitoring sites in the forebay (monitoring season 2020) and bypassed reach (monitoring season 2021). Please provide all water temperature data in degrees Fahrenheit and all DO data in units of milligrams per liter (mg/L).

Bypassed Reach Flow and Aquatic Habitat Study

2. Attachment 3 of the Bypassed Reach Flow and Aquatic Habitat Study Report provides habitat suitability maps for species/guilds specified in Table 3 of Attachment 2 for each modelled flow scenario (i.e., 7 cubic feet per second [cfs], 24 cfs, 33 cfs, and 91 cfs). In addition, please provide: (1) depth and velocity heat maps for each of the modelled flow scenarios; and (2) tabulations, for each modelled flow scenario the weighted usable area (WUA) for the species (all life stages of Roanoke logperch) and guilds specified in Table 3.

3. Page 30 and Table 3 of Attachment 2 states that the modelled shallow-slow guild includes three categories: (1) fine and coarse mixed substrate sizes with no boulder/bedrock (represented by spawning redbreast sunfish), (2) all substrate sizes with aquatic vegetation (represented by young-of-year silver redhorse), and (3) coarse substrate (represented by generic shallow-slow guild). However, the aforementioned habitat suitability maps in Attachment 3 (item 2 above) did not include a map for the second category (i.e., all substrate sizes with aquatic vegetation). Please provide a habitat suitability map for this category as well as the tabulated WUA.

Wetlands, Riparian, and Littoral Habitat Study

4. The desktop-study results presented at the USR meeting stated that 61.4 acres of wetlands were identified from National Wetlands Inventory (NWI) data and that several somewhat severely stressed wetlands were identified using the Virginia Department of Environmental Quality Wetland Conditional Assessment Tool (WetCAT). Please clarify

whether the WetCAT wetlands are included within the 61.4 acres from the NWI data or additional to that total. If the latter, please provide details on any additional acreages from the WetCAT data.

5. The NWI maps presented at the USR meeting and in the Wetlands, Riparian, and Littoral Characterization Study Report use different wetland terminologies (e.g., freshwater emergent, freshwater forested, freshwater pond, riverine) than what is presented in their respective text sections (e.g., palustrine forested, palustrine emergent, palustrine unconsolidated bottom, riverine). Therefore, please use consistent NWI terminologies across both text and maps in future filings.

Recreation Study

6. Potential recreation enhancements were discussed while reviewing the Recreation Study Report during the USR meeting. For any specific enhancements proposed in the final license application (FLA), please discuss any potential land-disturbing, land-clearing, or land-development activities. In providing such detail, please describe the extent of such enhancements (in acres) and characterize any habitats that may be affected so that staff can analyze potential effects of construction, maintenance, and/or increased visitor activity on terrestrial resources (including any federally listed or state-protected species).

COMMENTS FROM THE ROANOKE RIVER BLUEWAY COMMITTEE

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Re: Niagara Hydroelectric Project (FERC #2466), Review of Draft License Application, Roanoke County, VA

Dear Secretary Bose:

The Roanoke River Blueway Committee, staffed by the Roanoke Valley – Alleghany Regional Commission and made up of local Roanoke River stakeholders and four member governments, offers the following corrections and comments on the summary, dated December 27, 2021 of the Updated Study Report Meeting held on December 14, 2021 for the Niagara Hydroelectric Project (Docket P-2466).

Project Relevance

The Niagara Hydroelectric Project (Project) is located within Roanoke County, a member government of the Roanoke Valley – Alleghany Regional Commission. The project also borders the Town of Vinton and is within six miles of the City of Roanoke, both also member governments of the Regional Commission and participants in the Roanoke River Blueway (Blueway) effort. The Roanoke River Blueway extends along the Roanoke River upstream until East Montgomery Park and downstream to the Hardy Ford access point which is owned and maintained by the Virginia Department of Game and Inland Fisheries (DGIF). The Blueway connects Roanoke County to the Cities of Salem and Roanoke and the Town of Vinton. Another major stakeholder is the Blue Ridge Parkway, which owns property in and around the Project and which has previously been a partner on Blueway access and greenway improvements. The Roanoke Valley Greenway Commission also has several planned projects that may be impacted by the Project and which will impact Blueway user experience.

Outdoor recreation and tourism are a major economic driver for the Roanoke Valley. Eleven percent of all visitors to the region come specifically to enjoy outdoor recreation amenities like the Blueway and the greenway network, according to the Virginia Tourism Corporation (VTC) Virginia Mountains Region Profile for FY2019. The Virginia Outdoors Plan identifies both the Roanoke River Greenway and the Blueway as regional priority projects. The Niagara Dam can be seen as an impediment to the average Blueway user, and the Roanoke River Blueway Committee supports any effort to improve the existing portage and to allow for increased access to this section of the river.

Comments and Corrections

Clarification on the Posting of Signage Regarding BRP Construction
On page 4 of the summary document, under Stakeholder Questions/Comments, the following is written:

> Amanda McGee stated that Roanoke County put up notices for recreationists and visitors to stay away from the areas around the Blue Ridge Parkway bridge construction, and that may have deterred users from trying to access these facilities over the course of this year.

COMMENTS FROM THE ROANOKE RIVER BLUEWAY COMMITTEE

This statement should be corrected. Ms. McGee did not intend to imply that Roanoke County was the only locality to put up signage, which was placed in the City of Roanoke and the Town of Vinton as well. Notification was also provided on the Roanoke River Blueway Facebook page. The signage specifically warned Blueway users about passing under the Roanoke River Overlook bridge during construction. Signage was placed at the request of the Blue Ridge Parkway. Construction began in May of 2021. Ms. McGee wished to emphasize that visitor numbers may have been depressed by the postings, but Blueway users were not prohibited from traveling under the bridge only advised that there was risk.

Comments Concerning the Portage

The Roanoke River Blueway Committee supports improvements to the portage take-out, put-in, trail and signage. The Updated Study Report (USR) notes that the put-in location may not be within the Project Boundary. The Roanoke River Blueway Committee reiterates a need for a more defined put-in location and improvements to that location to address this development.

Concerns at Inaccurate Timing of Meeting

The Recreation Study portion of the USR meeting was supposed to be held at 10:30 am according to the schedule distributed to stakeholders by AEP. Unfortunately, the meeting concluded before this time. At least one regional stakeholder, Pete Eshelman from Roanoke Outside, was unable to attend the correct portion of the meeting because it was not at the advised time.

Comments prepared by Regional Commission staff. Please forward any comments or concerns to Amanda McGee, Regional Planner III, at amcgee@rvarc.org or call 540-343-4417.

Respectfully,

The Roanoke River Blueway Committee

Roanoke River BLUEWAY

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Dec 22, 2021

Secretary Kimberly D. Bose
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, DC 20426

Re: Niagara Hydroelectric Project (P-2466-034) Updated Study Meeting summary feedback

Dear Secretary Bose:

The Roanoke Valley Greenway Commission appreciate the opportunity to provide additional feedback to the meeting notes from the Study Review presentation of December 14th for Niagara Hydroelectric Project, FERC No. 2466. We stand by our initial comments on the Final Recreation Study made in our letter dated December 29th, 2021 but would like to add the following based upon our review of the Study Meeting notes.

1) We are concerned that public participation in the Study Meeting was hindered by the accelerated presentation schedule on December 14th, which led to the presentation times differing significantly from the meeting's announced schedule. It had been communicated ahead of time that the Recreation Study would be discussed at 10:30am. In the meeting itself though, the earlier presentations were finished ahead of schedule and the decision was made to skip the morning break. This led to the Recreation Study being presented and discussed approximately 45 minutes earlier, wrapping up before 10:30. We know of at least one recognized stakeholder who attempted to join the call at the designated time, but since the meeting was on an extended lunch break at that time, they did not get to participate.

2) Because of the uncertain location of the canoe/kayak put in as was discussed during the Recreation Study review, a group of stakeholders made a visit to the area of the National Park Service's overlook trail below the Roanoke River Bridge. It was clear from our visit that recreational users who are utilizing the portage are leaving the project area and accessing the river within the National Park Service boundary. It is our belief that this clearly points to the need for the put in location to be formally developed within the Appalachian Power project boundary. Offering a portage that is only established at the take out point is effectively a non-functioning portage.

I look forward to continuing the dialogue with the project team and other stakeholders to improve the recreational access in the area. Thank you for the opportunity to provide comments at this point.

Sincerely,

Frank Maguire
Roanoke Valley Greenway Coordinator

Bill Tanger, Roanoke, VA.
January 24, 2022
Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Re: Niagara Hydroelectric Project (FERC No. 2466)
Review of Draft License Application and Updated Study Report
Submission of Comments from Friends of the Rivers of Virginia
Dear Secretary Bose:

Recreation Plan comments: Recommended Recreation Improvements

Along with the Roanoke River Blueway Committee, Roanoke County, and the Roanoke Regional Partnership, FORVA encourages Appalachian (APCo) to support development of a public access facility (river-right) and adjacent to the Niagara reservoir that will provide vehicular parking.

A river access at this location would reduce or obviate the need for any portage on river left if boaters could use a shuttle around the dam and put in again below the dam. Roanoke County has agreed to provide land owned by the Virginia Recreational Facilities Authority and under a lease to Explore Park.

Alternatively, a hand carry portage trail on river right should be considered that would allow boaters to access the river below the dam. While potentially expensive such a portage is possible. Currently, to start their float trips many boaters carry their kayaks upstream from an informal river trail off the Blue Ridge Parkway to just below the dam. Such a portage trail would provide better access for the section below the dam.

While APCo has said a river right portage is infeasible due to length and topography, this conclusion was based on a public vehicular river access from the nearby road system and included a parking area. However, a simple river right portage trail could be built without public access or parking. This option should be studied and an estimate prepared.

Finally, if current status of property ownership prohibits developing a river right portage, then APCo should create a set-aside fund in anticipation of the resolution of such issues in future years. Such a mechanism has been used on other hydro projects and can be managed by the Department of Conservation and Recreation. An appropriate amount for the 30 year license should be at least $100,000, which is less than one third the annual displaced fuel cost.

The response by APCo that the river right option is infeasible should be determined by an independent third party to provide credibility in the matter.

Sincerely,

Bill Tanger, Chair
Friends of the Rivers of Virginia